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HELMINTHOLOGICAL ABSTRACTS

incorporating

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HELMINTHOLOGICAL ABSTRACTS

Vol. 22, Part 5

1953

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FOR THE YEAR 1953

Vol. 22, Part 5

438—Abstracts of Doctoral Dissertations. University of Nebraska.

a. KELLEY, Jr., G. W., 1953.—" A study of the intestinal parasites of man in Nebraska, with special reference to incidence and epidemiology in the Scotts Bluff area." Year 1953, pp. 290–294.

b. SMITH, Jr., C. F., 1953.—" Studies on the helminth fauna of small mammals in the areas of the High Plains, Central and Southern Rockies." Year 1953, pp. 300–304.

(438a) In the mixed population of Scotts Bluff County, Nebraska, Mexican labourers had the highest incidence of general parasitism. The only four cases of *Ascaris*, one of seven instances of *Hymenolepis nana* and one of two cases of *Taenia saginata* were found in Mexicans. There were four cases of *H. nana* and one of *T. saginata* in non-Spanish Americans and one in a Spanish American. Epidemiological investigations having identified Mexicans as the source of *Cysticercus bovis* in various herds in the county, a programme of sanitary improvements and a survey were started throughout the county. The use of irrigation laterals and drainage canals for outlets from home sewers was a possible source of conveyance of *T. saginata* eggs to cattle. R.T.L.

(438b) More than 895 mammals, mostly rodents from the High Plains, Central and Southern Rockies areas, examined by Smith gave 32 species of helminths. A new anoplocephalid representing a new genus from *Thomomys talpoides* and a new species of *Raillietina* from *Sigmodon hispidus texianus* are recorded [but are not named or described in the abstract]. The following are considered synonyms: *Quinqueserialis wolgaensis* Skvortsov, 1934 syn. of *Q. hassalli* McIntosh & McIntosh, 1934; *Catenotaenia linsdalei* McIntosh, 1941 syn. of *C. dendritica* (Goeze, 1782) Janicki, 1904; *Choanotaenia* sp. of Rausch & Tiner, 1949 syn. of *C. nebraskensis* Hansen, 1950; *Hymenolepis johnsoni* Schiller, 1952 syn. of *H. evaginata* Barker & Andrews, 1915; *H. citelli* (McLeod, 1933) Hughes, 1941 syn. of *H. diminuta* Rudolphi, 1819. Four cestode cysts were tentatively identified as *Taenia lyncis*, *T. taeniaeformis*, *Cladotaenia* sp. Erickson, 1938 and *Cladotaenia* sp. Hitherto unrecorded hosts listed are: *Microtus longicaudus mordax*, *M. longicaudus* subsp., *M. montanus caryi* and *M. m. fusus* for *Andrya macrocephala*; *M. l. mordax* and *Thomomys talpoides* for *A. primordialis*; *Glaucomys sabrinus canescens* for *A. sciuri*; *Lagurus curtatus levidensis* for *Catenotaenia dendritica*; *Sylvilagus nuttalli pinetus* and *S. audiobonii baileyi* for *Cittotaenia pectinata americana*; *M. montanus fusus* and *M. pennsylvanicus modestus* for *Hymenolepis evaginata*; *Geomys bursarius* and *Onychomys leucogaster* for *Monoecocestus sigmodontis*; *Eutamias* sp. and *Thomomys talpoides* for *Paranoplocephala infrequens*; *Citellus lateralis lateralis* for *Raillietina (Paroniella) retractilis*; *Neotoma albigula albigula* for *R. (R.) bakeri*; *Citellus armatus* and *Peromyscus maniculatus* for *Moniliformis clarki*. R.T.L.

439—Acta Gastro-Enterologica Belgica.

a. ARON, E., 1953.—" L'éosinophilie parasitaire. A propos d'une infestation à *Strongyloides stercoralis*." **16** (8/9), 498–505.

* Titles so marked throughout this number have not been seen in the original.

440—Acta Haematologica.

a. TRINCÃO, C., GOUVEIA, E., FRANCO, A. & PARREIRA, F., 1953.—" Das Serum- und Erythrozytenzink bei Ankylostomiasis." **9** (5), 302–306. [English & French summaries p. 306.]
b. BONSDORFF, B. VON, 1953.—" *Diphyllobothrium latum* und perniziöse Anämie." **10** (3), 129–143. [English & French summaries pp. 142–143.]

(440a) Trincão *et al.* have studied the zinc content of the serum in 24 patients with ancylostomiasis and report that the zinc level was reduced in proportion to the severity of the anaemia. In seven of the patients the zinc content of the erythrocytes increased, again in relation to the severity of the anaemia. A.E.F.

(440b) Bonsdorff summarizes the work of himself and his collaborators on the pathogenesis of pernicious anaemia associated with *Diphyllobothrium latum* infection. The anaemia is shown to be due to the worm competing with the host for vitamin B_{12}, thus causing a deficiency in the host. The development of pernicious anaemia is favoured by a diminished supply of the extrinsic factor and a lessened production of the intrinsic factor. A.E.F.

441—Acta Leidensia.

a. HULSHOFF, A. A., 1953.—" Ancylostomiasis." **23**, 89–96.

442—Acta Medica Italica di Malattie Infettive e Parassitarie.

a. PERRONI, G. B. & PANCALDO, A., 1953.—" Sulle alterazioni elettrocardiografiche nell'anchilostomiasi. (Contributo allo studio della patogenesi.)" **8** (8), 206–210. [English, French & German summaries p. 210.]

443—Acta Medica Philippina.

a. YOGORE, Jr., M. G. & TANGCO, A. F., 1953.—" Notes on sparganosis in a Filipino." **9** (4), 301–303.

444—Acta Medica Scandinavica. Supplementum.

a. BONSDORFF, B. VON, 1953.—" Pathogenesis of pernicious anemia, caused by the fish tapeworm." [Abstract of paper presented at 23rd Scandinavian Congress for Internal Medicine.] **147**, Suppl. 287, p. 63. [Discussion pp. 63–64.]
b. KAIPAINEN, W. J. & TÖTTERMAN, G., 1953.—" On the B_{12} vitamin content in faeces in pernicious tape-worm anaemia." [Abstract of paper presented at 23rd Scandinavian Congress for Internal Medicine.] **147**, Suppl. 287, pp. 66–67. [Discussion pp. 67–68.]

(444a) At the 23rd Scandinavian Congress for Internal Medicine, Bonsdorff recalled that the work of Bonsdorff & Gordin [for abstracts see Helm. Abs., **21**, No. 168a and **22**, No. 65a] showed that dried *Diphyllobothrium latum* in daily doses of 5 gm. or 10 gm. can be used as a source of extrinsic factor in Castle's test and that Nyberg had found that the growth of *Lactobacillus leichmanii* is strongly stimulated by *D. latum* extracts. These findings suggest that the tapeworm in the intestine assimilates considerable amounts of vitamin B_{12} and that a pernicious anaemia develops under certain circumstances contigent on the position of the worm and the supply of extrinsic and intrinsic factor. In the subsequent discussion Schrumpf stated that in six out of eight cases treated with small doses of folic acid (0·67 mg.) and vitamin B_{12} (10 microgrammes) the results were excellent. R.T.L.

(444b) As experience has shown that there is no correlation between the onset of pernicious anaemia and the intensity of infection with *Diphyllobothrium latum*, Kaipainen & Tötterman have made a comparative study of healthy infected persons without anaemia and two patients with Addisonian pernicious anaemia. The vitamin B_{12} in the faeces of infected persons with and without pernicious anaemia showed little or no difference but in the Addisonian cases the B_{12} values were extremely low. This does not support the idea that the parasite can give rise to the anaemia through absorption or consumption of vitamin B_{12}. In the discussion Bonsdorff remarked that the quantity of vitamin B_{12} in the faeces varies greatly owing to the extent to which this is synthesized in the caecum and colon where it cannot be absorbed. On the other hand the parasite lives in the small intestine. R.T.L.

445—Acta Parasitologica Polonica.

a. MICHAJŁOW, W., 1953.—" O stosunkach wewnątrzgatunkowych w populacjach procerkoidów *Triaenophorus lucii* (Müll.)." **1**, 1–28. [English & Russian summaries pp. 23–28.]
b. FURMAGA, S., 1953.—" *Spirometra janickii* sp.n. (Diphyllobothriidae)." **1**, 29–59. [English & Russian summaries pp. 49–59.]
c. DZIĘCIOŁOWSKI, Z. & KUŹMICKI, R., 1953.—" Uwagi o stanie klinicznym chorych zarażonych tasiemcem nieuzbrojonym *Taeniarhynchus saginatus* (Goeze)." **1**, 121–132. [English & Russian summaries pp. 129–132.]
d. IWAŃCZUK, I., 1953.—" Badania nad zarażeniem pasożytami jelitowymi dzieci w żłobkach Warszawy." **1**, 133–147. [English & Russian summaries pp. 146–147.]
e. STEFAŃSKI, W. & TARCZYŃSKI, S., 1953.—" Sur le développement de l'*Agamodistomum suis* Duncker, 1881." **1**, 149–158. [Polish & Russian summaries pp. 155–158.]
f. ŻARNOWSKI, E., 1953.—" Nowy tasiemiec *Hymenolepis stefanskii* sp.n. z jelita ryjówki aksamitnej—*Sorex araneus* L." **1**, 313–328. [English & Russian summaries pp. 323–328.]
g. STEFAŃSKI, W., 1953.—" *Rhabditis gingivalis* sp.n. parasite trouvé dans un granulome de la gencive chez un cheval." **1**, 329–336. [Polish & Russian summaries pp. 335–336.]
h. MATWIEJEW, M. & ŻULIŃSKI, T., 1953.—"Przypadek schorzenia pasożytniczego żuchwy konia, wywołanego przez *Rhabditis gingivalis* Stefański, 1953." **1**, 337–343. [English & Russian summaries pp. 342–343.]
i. GROSSMAN, T. & SANDNER, H., 1953.—" Helmintofauna płazów Białowieskiego Parku Narodowego." **1**, 345–352. [English & Russian summaries pp. 351–352.]
j. SOŁTYS, A., 1953.—" Helmintofauna ryjówkowatych (Soricidae) Białowieskiego Parku Narodowego." **1**, 353–402. [English & Russian summaries pp. 389–402.]
k. KOZŁOWSKA, J., 1953.—" Pasożyty przewodu pokarmowego psów w Łodzi." **1**, 403–410. [English & Russian summaries pp. 409–410.]
l. BEZUBIK, B., 1953.—" *Digramma interrupta* Rudolphi 1810 (Ligulidae f.n.)." **1**, 411–443. [English & Russian summaries pp. 434–443.]

(445a) Michajłow has studied the procercoids of *Triaenophorus lucii* in 238 infected *Cyclops strenuus* and *C. vicinus*. He found that even heavy infections did not cause the death of the host but did shorten its lifetime slightly. In large populations the rate of development and of growth of the individuals was disturbed, due to an insufficient food supply. Eventually all reach the full stage of development but may be only half the normal size, an adaptation of the population to adverse conditions. Additional infections of the host are always possible and there were no effects of one part of the population on another due to the difference in the stage of development. He concludes that there is no intra-specific struggle for existence in procercoid populations of *T. lucii*. G.I.P.

(445b) *Spirometra janickii* n.sp. in *Canis lupus* and *Lynx lynx* is described and figured from the Lublin district of Poland. Spargana found in *Sorex araneus* and *Vulpes vulpes* are believed to belong to the new species. The strobila is about 1 m. long by 8 mm. broad. The testes and vitellaria are not confluent in the anterior part of the segment, except in the terminal segments. The uterus, in medium sized segments, is bipartite with nine thick loops in the anterior and four to six loops in the posterior part: in the terminal segments it is uniform with 15 loops. The cirrus has a thick rounded end and is constricted at the base. From a review of previous investigations and from his own work Furmaga concludes that *Spirometra* is a valid genus containing three species, *S. janickii*, *S. mansonoides* and *S. erinacei-europaei*. He reduces *S. erinacei*, *S. raillieti* and *S. mansoni* to subspecies of *S. erinacei-europaei*. G.I.P.

(445c) The authors describe the clinical manifestations which they observed in 230 persons infected with *Taenia saginata* and the improvement seen in 120 during a period of three to twelve months following successful treatment. S.W.

(445d) At 21 nurseries in the city of Warsaw, 1,119 children up to four years of age and 67 of the personnel were examined for helminth infections. The percentages of infections in the children were: *Trichuris trichiura* 1·2%, *Ascaris lumbricoides* 0·8%, *Enterobius vermicularis* 8·6%, with corresponding values of 9·9%, 1·4% and 7·4% for the personnel. *Hymenolepis nana* was found in 0·2% of the children and *Taenia* sp. in 3% of the personnel. It is concluded that the intensity of infection increases with the age of the child but that the percentage infection is low for the age group 0–4 years, that helminth infections are greatest in the summer months and that the collective upbringing of children favours parasitic infections. G.I.P.

(445e) Eggs of *Alaria alata* appeared in the faeces of a dog 45 days after it had been fed with 150–200 metacercariae of *Agamodistomum suis* taken from the diaphragms of wild and domestic pigs. Adults were recovered at post-mortem nine months later. The pig should be considered an additional host, the normal intermediaries being *Planorbis planorbis* or *P. vortex* and frogs. G.I.P.

(445f) *Hymenolepis stefańskii* n.sp. from *Sorex araneus* is described and figured but not differentiated from other species of the genus. It is a very small tapeworm consisting of 7–12 proglottides. There are 15–22 rostellar hooks 25 μ to 32 μ in length. There are three irregularly oval testes behind the bilobed ovary, unilateral genital pores and a small internal and a large external seminal vesicle. The cirrus, 110 μ to 125 μ long, is armed with small spines. The thin-shelled eggs measure 45 μ to 64 $\mu \times 38\,\mu$ to 50 μ. R.T.L.

(445g) Numerous *Rhabditis gingivalis* n.sp. were present in a granulomatous growth in the mucous membrane of a horse in the Lublin district of Poland. No male was found in the material available for examination. The female is 250 μ to 430 μ long, the buccal capsule is straight and cylindrical and is one-eighteenth to one-nineteenth the length of the oesophagus which has two swellings on the end and is 70 μ to 90 μ long. The uterus is amphidelphic. The thin-walled ova are 43 $\mu \times 20\,\mu$. The genital opening is behind the middle of the body (V=60%–65%), the tail is sharply pointed and is shorter than the distance between the genital opening and the anus. The article concludes with a summary of the literature on the species of *Rhabditis* sensu lato parasitic in vertebrates. R.T.L.

(445h) In the horse from which *Rhabditis gingivalis* was obtained [see abstract No. 445g above] there was considerable hyperplasia of the connective tissue of the oral part of the mandible and abnormal mobility of the bone from the canine to the premolar teeth. A number of saccular dilatations were filled by the parasites. R.T.L.

(445i) In an oecological survey of the helminth parasites of the Amphibia of the Białowieża National Park, 573 amphibians were examined. Neither the 13 trematodes nor the acanthocephalan were new to this area or to science. In *Rana temporaria* there were only four trematode species although in the neighbourhood of Warsaw 11 species are known. Of the terrestrial frogs 45% had *Polystoma integerrimum* and 50% had *Haplometra cylindracea*; *Tylodelphys rachiaea* occurred in 66% of *Rana esculenta*. That these trematodes, usually rare, were present so frequently is probably due to a whole set of oecological factors. G.I.P.

(445j) Sołtys gives short systematic notes of 25 helminths, collected from Soricidae by the Ecology Station at Białowieża, including the following six new forms which are illustrated by text figures: *Angiostrongylus soricis* n.sp. from *Sorex minutus* [not differentiated from allied species]; *Plagiorchis opisthovitellinus* n.sp. (for the specimen "C" of *Distomum exasperatum* (Rudolphi) which was described by Szidat in 1928) from *S. minutus*, *S. macropygmaeus* and *Neomys fodiens*; *Hymenolepis magnirostellata* forma *44* n.f. from *N. fodiens* which differs from the typical *H. magnirostellata* in having 44 hooks; *H. tridontophora* n.sp. from *N. fodiens* is 40 mm. to 60 mm. long, has 10 hooks (similar in size to those of *H. singularis* which is only 7 mm. in length) and hook guards with two highly characteristic finger-like processes; in *H. anacetabulata* n.sp. from *N. fodiens*, the scolex resembles that of *Dicranotaenia polyacantha* but does not possess the suckers which in *D. polyacantha* assist in fixing the scolex; *Dicranotaenia globosoides* n.sp. from *S. minutus*, *N. fodiens* and *N. anomalus milleri* is small and measures up to 2 mm. in length; in other respects it resembles *D. globosa* which, however, attains a length of 80 mm. and does not contain many eggs. *Capillaria ventricola* Sołtys, 1952 is shown to be a synonym of *C. kutori* Ruchladiewa, 1946, and *C. urinicola* Sołtys, 1952 to be a synonym of *C. capillaris* (Linstow, 1882) Stiles & Stanley, 1932. The article concludes with two parasite-host tables of the helminths of the European species of Soricidae. R.T.L.

(445k) In Lodz 55 out of 70 dogs contained helminths, viz., *Dipylidium caninum* (36), *Uncinaria stenocephala* (16), *Toxocara canis* (12), *Toxascaris leonina* (9), *Taenia pisiformis* (5), *Taenia hydatigena* (3) and *Mesocestoides lineatus* (1). There was a marked difference in the incidence of *D. caninum* in house dogs (48·3%) and stray dogs (75%). The occurrence of only a single specimen of *M. lineatus* is attributed to the yearly campaign against rats in the town. A review of Polish literature reveals differences in the frequency and type of helminth infections in rural and urban dogs. G.I.P.

(445l) The rare tapeworm *Digramma interrupta* (Rudolphi, 1810) is redescribed and compared with *Ligula intestinalis* and *Schistocephalus solidus*. Bezubik concludes that the genus *Digramma* could have arisen from *Ligula* as a result of the severance of its sexual apparatus and that this took place gradually. He does not accept the placing of *Schistocephalus* in Ligulinae. Its many similarities to representatives of Diphyllobothriinae justify its transference to this subfamily. The families Ligulidae Monticelli & Crety, 1891 and Diphyllobothriidae Lühe, 1910 are redefined by the author. [Ligulidae f.n. in the title refers not to a new family but to this revised definition.] R.T.L.

446—Ärztliche Forschung.

a. MENDHEIM, H., SCHEID, G. & RUDOLFSKY, W., 1953.—" Untersuchungen über den Wirkungsmechanismus proteolytischer Fermente auf Spulwürmer." **7**, I.Orig., (12), 552–554.

(446a) Mendheim *et al.* describe the processes in the destruction of Ascaris by the enzymes containing papain. The homogeneous layer of the cuticle is first affected and then the subcuticle is dissolved and vacuolized. Later the underlying muscle is destroyed and the genital tract exposed. Finally there is a general decomposition and the worm becomes unrecognizable. The paper is illustrated with photomicrographs. A.E.F.

447—Ärztliche Wochenschrift. Berlin.

a. HEUCK, F. & KÜSEL, H., 1953.—" Klinischer und experimenteller Beitrag zur Darmallergie bei Ascarideninfektionen." **8** (52), 1237–1238.

(447a) Heuck & Küsel report that 51% of 154 cases of human ascariasis showed changes in the intestinal tract: these changes were in no way correlated to the severity of the infection. Volunteers were then tested for cutaneous sensitivity to whole Ascaris extract and for sensitivity of the alimentary tract to a barium meal plus the same extract. Those who were negative or weakly positive to the skin test also showed no intestinal reaction; those who were strongly positive to the skin test showed changes in the mucous membrane of the intestine similar to those found in the ascariasis patients. It is concluded that hypersensitivity to Ascaris body substance can be the cause of abdominal symptoms. A.E.F.

448—Agricultura Técnica. Chile.

a. TAGLE V., I., 1953.—" Parásitos de los animales domésticos en Chile determinados en el Instituto de Investigaciones Veterinarias." **13** (2), 93–108. [English summary p. 108.]

(448a) Tagle lists under hosts the helminths which he and his colleagues of the Institute of Veterinary Research have observed in domestic animals in Chile and discusses their local importance. M.McK.

449—Agricultural Chemicals. Baltimore.

a. SPEARS, J. F., 1953.—" Chemical control of golden nematode." **8** (12), 52–54, 111, 113.

(449a) Soil fumigation with D-D mixture or ethylene dibromide, although not always economically feasible, is the best chemical means of control of the potato root eelworm. Spears describes the apparatus, preparation of the land, and method of application as used for emergency fumigation of isolated infestations. He points out the danger of spread of the

nematode and the value of crop rotation. Besides the infestations on Long Island, a single potato root eelworm cyst has been recovered from a farm in New Jersey. M.T.F.

450—Agriculture and Animal Husbandry. Lucknow.

a. SINGH, B., SINGH, J. & MATHUR, S. C., 1953.—" Ear cockle or 'sehun' disease of wheat." **3** (10/12), 7–9.
b. SINGH, B., 1953.—" Some important diseases of paddy." **3** (10/12), 27–30.

(450a) In Uttar Pradesh State *Anguillulina tritici* causes losses in wheat production of up to 30%. Imported from the Punjab in 1938 it may threaten wheat cultivation in the State in the near future. It is known locally as "sehun". Singh *et al.* discuss the present distribution there and review the life-cycle and symptoms of the disease. No resistant varieties of wheat are known. As a preventive measure affected plants should be removed and burnt. Moist heat kills the nematodes. Soaking the seeds in water for four hours and then drying them in the sun can reduce incidence to 60% or 80%. Clean seeds should be sown, either by dibbler, when bad seeds are automatically discarded, or after previous separation by flotation in 20% brine. M.MCK.

(450b) "Ufra" disease caused by *Ditylenchus angustus* is found in most paddy tracts in Uttar Pradesh and causes up to 50% damage. Control is recommended by burning diseased plants and stubble, improving drainage, selecting seed from disease-free areas and cultivating resistant varieties. M.MCK.

451—Algérie Médicale.

a. THIODET, J., FOURRIER, A. & BABEAU, P., 1953.—" Syndrome agranulocytaire et *Taenia saginata*." **57** (2), 165–166, 169.
b. ZAFFRAN, A., 1953.—" Kyste hydatique du poumon, traité par broncho aspiration." **57** (3), 244, 247–248.
c. FRIESS, J., PIERROU, M., MIMOUN, G., JULIA, A. & SEGALEN, J., 1953.—" La filariose lymphatique à son stade de début." **57** (5), 436, 439–440, 443–444.
d. FRIESS, J., PIERROU, M., MIMOUN, G., JULIA, A. & SEGALEN, J., 1953.—" Sur un cas d'adénopathie tropicale." **57** (5), 444, 447.

452—Al-Mihan Al-Tibbiyah. Baghdad.

a. WATSON, J. M., 1953.—" Studies on bilharziasis in Iraq. Part IX. Relationship of incidence to occupation." **1** (1/2), 13–18.
b. NOR EL DIN, G. & EL-BAZ, I., 1953.—" Sputum examination in the diagnosis of bilharziasis of lungs." **1** (1/2), 19–25.

(452a) Watson had studied the incidence of schistosomiasis haematobia in 31,800 males in Iraq, and has tried to correlate the incidence with the occupations of the 7,797 men found to be infected. There was no obvious correlation between incidence and occupation but the incidence varied with the financial status. Those groups with an infestation rate above the mean were poor, lived in houses without a pure water supply and received no regular compulsory medical attention. Those with an infestation rate below the mean were either financially better off or received regular medical care as in the case of schoolboys, soldiers, policemen and health workers. S.W.

(452b) [This paper is substantially the same as that published in *Amer. J. trop. Med. Hyg.*, 1954, **3**, 326–328. For abstract see Helms. Abs., **23**, No. 4m.]

453—American Heart Journal.

a. GIRGIS, B., GUIRGUIS, S., MOWAFY, R. & EL-KATIB, H., 1953.—" Bilharzial cor pulmonale. A clinicopathologic report of two cases." **45** (2), 190–200.
b. KURBAN, A. K., SHAFIK, A. I., ATTAR, S. A. & DRAGATSI, G. A., 1953.—" Echinococcosis of the heart." **46** (5), 764–771.

454—American Journal of Clinical Pathology.

a. BRILL, R., CHURG, J. & BEAVER, P. C., 1953.—" Allergic granulomatosis associated with visceral larva migrans. Case report with autopsy findings of *Toxocara* infection in a child." **23** (12), 1208–1215.

(454a) In a two-year-old child, clinical symptoms of allergic granulomatosis with pronounced eosinophilia were found at autopsy to be associated with the presence of larvae of *Toxocara canis* in nodules in the lungs, heart, liver and kidneys. The symptoms were more acute and severe, and the granulomatous foci were more widely disseminated than in previous recorded cases. R.T.L.

455—American Journal of Digestive Diseases.

a. KOSKOWSKI, W. & MAHFOUZ, M., 1953.—" An observation on the influence of tapeworm infestation in a dog on the secretion of intestinal juice." **20** (10), 313–318.

(455a) Using a dog with a permanent Thiry-Vella fistula, Koskowski & Mahfouz have investigated the effect of *Taenia multiceps* infection on the secretion of intestinal juice. There was a marked diminution in the amount of juice secreted under the influence of histamine, invertase activity was inhibited and, in some experiments, the onset of secretion was delayed. As the worm was not in the isolated portion of the jejunum the effects were due to the toxic action of substances resulting from the presence of the worm in the intestine. After expulsion of the worm the secretion of intestinal juice and its invertase activity became normal. S.W.

456—American Journal of Diseases of Children.

a. BUMBALO, T. S., GUSTINA, F. J., BONA, J. & OLEKSIAK, R. E., 1953.—" Pinworm infection (enterobiasis) in children. A comparative study of four oxyuricides." **86** (5), 592–600.
b. FELLERS, F. X., 1953.—" Agglutination studies in visceral larva migrans." **86** (6), 767–771.

(456a) A study of the effect of four oxyuricides on four groups of 40 children harbouring *Enterobius vermicularis* gave the following cures: egressin 52%, diphenan 30%, methylrosaniline (gentian violet) 82% and oxytetracycline 84%. Although oxytetracycline was the most effective, it was relatively very costly. A completely harmless and inexpensive anthelmintic which is also easy to take and suitable for simultaneous treatment of large groups has still to be found. R.T.L.

(456b) Fellers reports a case believed to be visceral larva migrans in a child between two and three years old. X-ray examination showed a pulmonary infiltration very similar to Loeffler's syndrome. In agglutination tests with *Toxocara canis* and *Ascaris lumbricoides* antigens there was a marked increase in titre with the former over a period of five-and-a-half-weeks (1:8 to 1:160) and an elevated titre with the latter (1:640). No ova were found in the faeces and it was thought that *T. canis* was more likely to be involved than *A. lumbricoides*. S.W.

457—American Journal of Medicine.

a. MADELL, S. H. & SPINGARN, C. L., 1953.—" Unusual thoracic manifestations in filariasis due to *Loa loa*. Results of treatment with hetrazan and naphuride sodium." **15** (2), 272–280.

(457a) Radiographs illustrate this report on a Nigerian patient with a cutaneous lymph varix of the left wall of the chest, a mediastinal tumour and a chylous pleural effusion. Sheathed microfilariae, identified as those of *Loa loa*, were abundant in pleural fluid and in capillary and venous blood in which they were most numerous at midday. Hetrazan treatment with up to 7 mg. per kg. body-weight per day for thirteen weeks reduced but failed to clear the blood completely of microfilariae or to prevent acute exacerbations of fever and painful swelling of the lymph varix. A test dose of 300 mg. of naphuride sodium intravenously followed by eight 1 gm. injections at weekly intervals resulted in the disappearance of the chest wall mass and the cessation of acute exacerbations of fever. The treatment was well tolerated. R.T.L.

458—American Journal of Pathology.

a. STEMMERMANN, G. N., 1953.—" Human infestation with *Fasciola gigantica*." **29** (4), 731–753.
b. STONER, R. D. & GODWIN, J. T., 1953.—" The effects of ACTH and cortisone upon susceptibility to trichinosis in mice." **29** (5), 943–950.

(458a) Five unusual cases of human infection with *Fasciola gigantica* are reported from Hawaii. Intermittent abdominal pain with fever and nausea were associated with the migratory phase of the disease. The pathological lesions were granulomatous irrespective of site. The infections were probably acquired by eating raw watercress from areas in which cattle ranged freely. R.T.L.

(458b) The course of experimental trichinelliasis in laboratory mice free from Salmonella and other metazoan parasites was not altered favourably by ACTH and cortisone. There was a slight increase in susceptibility to Trichinella infection after ACTH therapy. With cortisone therapy the mortality showed a 45% increase. R.T.L.

459—American Journal of Public Health.

a. SUSSMAN, O., 1953.—" Animal diseases transmissible to man." **43** (11), 1423–1427.
b. GOULD, S. E., GOMBERG, H. J. & BETHELL, F. H., 1953.—" Prevention of trichinosis by gamma irradiation of pork as a public health measure." **43** (12), 1550–1557.

(459b) Gamma radiation of pork is regarded as a practicable measure for the control of trichinosis in the U.S.A., where routine microscopic inspection is impossible on account of the rapid processing methods in use. A scheme is outlined, with an estimate of costs, for the construction and operation of a radiation unit with a radioactive plaque 6 ft. high and 5 ft. long to which carcasses would be exposed during the chilling process. The cost of treating pork produced at a plant operating at a daily capacity of 2,000 hogs for 260 days in the year is estimated at 0·23 cents per pound or 31·1 cents per hog, a sum which would be reduced over a period of years. P.M.B.

460—American Midland Naturalist

a. MIZELLE, J. D. & KLUCKA, A. R., 1953.—" Studies on monogenetic trematodes. XIV. Dactylogyridae from Wisconsin fishes." **49** (3), 720–733.
b. DOWELL, A. M., 1953.—" *Catenotaenia californica*, sp.nov., a cestode of the kangaroo rat, *Dipodomys panamintinus mohavensis*." **49** (3), 738–742.
c. HANSEN, M. F., OONYAWONGSE, R. & ACKERT, J. E., 1953.—" Rate of development, viability, vigor, and virulence of *Ascaridia galli* ova cultured respectively in air and in water." **49** (3), 743–750.
d. HALEY, A. J. & BULLOCK, W. L., 1953.—" A new species of Acanthocephala from the sunfish, *Lepomis gibbosus* (Linnaeus), with a re-description of the family Fessisentidae Van Cleave 1931." **50** (1), 202–205.
e. MIZELLE, J. D. & WEBB, F. O., 1953.—" Studies on monogenetic trematodes. XV. Dactylogyridae from Alaska, Wisconsin, and Wyoming." **50** (1), 206–217.
f. DINEEN, C. F., 1953.—" An ecological study of a Minnesota pond." **50** (2), 349–376.
g. KRUIDENIER, F. J., 1953.—" Studies on the formation and function of mucoids in cercariae: non-virgulate xiphidiocercariae." **50** (2), 382–396.
h. WARREN, B. H., 1953.—" A new type of metacercarial cyst of the genus *Apophallus*, from the perch, *Perca flavescens*, in Minnesota." **50** (2), 397–401.
i. HUNTER, W. S. & QUAY, T. L., 1953.—" An ecological study of the helminth fauna of Macgillivray's seaside sparrow, *Ammospiza maritima macgillivraii* (Audubon)." **50** (2), 407–413.
j. VAN DER SCHALIE, H., 1953.—" Nembutal as a relaxing agent for mollusks." **50** (2), 511–512.

(460a) The 17 species of Monogenea reported from fishes caught in Wisconsin waters include *Urocleidus chrysops* n.sp. from *Lepibema chrysops*, *D[illegible]tylogyrus attenua[illegible]* n.sp., *D. claviformis* n.sp. and *D. lineatus* n.sp. from *Semotilus atromaculatus*, *D. distinctus* n.sp. from *Notropis volucellus*, *D. dubius* n.sp., *D. pyriformis* n.sp. and *D. vannus* n.sp. from *Notropis cornutus frontalis*. R.T.L.

(460b) *Catenotaenia californica* n.sp. from *Dipodomys panamintinus mohavensis* has only two longitudinal excretory canals. It differs from the most closely related *C. pusilla* in that the testes number 72–90 and are arranged in two bands, one in each lateral half of the segment; the uterine branch has 25–30 lateral branches on each side; the shell gland measures 24 μ–30 μ and the seminal vesicle 110 μ–140 μ. R.T.L.

(460c) *Ascaridia galli* ova developed more rapidly in water cultures than in air cultures of 90% relative humidity and the percentage of viable ova was higher in water cultures. 0·4% to 0·1% of those in water cultures and 4·7% to 6% of those in air cultures were dead after thirty days incubation. When fed to chickens, the number of worms recovered did not differ significantly but the average length from air-cultured ova was greater than that from water-cultured ova. The possibility that those larvae developed from air-cultured ova shortened or eliminated the tissue phase is discussed. R.T.L.

(460d) *Fessisentis vancleavei* n.sp. from *Lepomis gibbosus* is smaller than *F. fessus*. It has a longer, narrower and more nearly cylindrical proboscis. There are twelve longitudinal rows of hooks with eight or nine hooks in each row. The anterior hooks are slightly smaller and the basal hooks a little larger. The lemnisci are considerably shorter. There are about seven nuclei on the outer wall of the posterior end of the proboscis receptacle. The discovery of this second species of *Fessisentis* has necessitated an emendation of the family Fessisentidae. R.T.L.

(460e) *Tetraonchus rauschi* n.sp. from the gills of *Thymallus signifer* is most closely related to *Tetraonchus monenteron* in which, however, the anchors are slenderer and their bases more deeply cleft. In *T. rauschi*, the naked base of the accessory piece has a conspicuous projection. A vagina is present. *T. variabilis* n.sp. from the gills of *Prosopium williamsoni* and *P. cylindraceum* is most closely related to *T. alaskensis* but the cirrus base is almost straight and is not basally articulated with the more complicated cirrus. The vitelline follicles are not in circumscribed groups and the vitellarial bands are confluent posteriorly. Systematic descriptions are also given of nine known species of the Dactylogyridae. R.T.L.

(460f) The seasonal fluctuations of populations, food web dynamics and community development in a Minnesota pond were studied. Of the eight leeches present, *Glossiphonia stagnalis* was the predominant species. *Erpobdella punctata* was common but *Haemopis grandis*, *H. marmoratis*, *Macrobdella decora* and *Placobdella rugosa* were seldom found. As the eggs of *G. stagnalis* are attached in mucoid sacs to the ventral surface, the population of this leech was effectively controlled by the fish predators except when the fish were eliminated during the early winter months. R.T.L.

(460g) In five species of non-virgulate cercariae, Kruidenier has demonstrated a series of homologous, ventral, bilaterally symmetrical glands, which are homologous with similar glands previously described by him in virgulate xiphidiocercariae. Their development and the discharge of their contents takes place in pre-emergent, immature cercariae. The secretions are stored in specialized caudal pockets or buccal cavities and are used by the emerged cercaria to attach itself to substrates. It is inferred that the cercaria is protected from the deleterious effects of its aquatic environment and from inimical host activities and that its migratory movements within its host are lubricated by these mucoid secretions. R.T.L.

(460h) A metacercaria named *Apophallus itascensis* n.sp., embedded in the musculature of *Perca flavescens* in northern Minnesota, is described and illustrated. The cyst wall consists of three layers. Because of its hardness, it is almost impossible to liberate the metacercaria without damage. When the cyst is ingested by a suitable host, the metacercaria emerges by a round escape hole digested from the thin, concave areas overlying the inner layer of the cyst. R.T.L.

(460i) Of 100 specimens of *Ammospiza maritima macgillivraii* taken on the salt marshes of Beaufort, North Carolina, only two were free of helminth infection: 42% had Trematoda,

51% had Cestoda, 59% had Nematoda and 83% had Acanthocephala. This is a new host for nine of the trematodes, three of the cestodes, seven of the nematodes and two of the acanthocephalans. *Oxyspirura petrowi*, *Choanotaenia infundibulum*, *Plagiorhynchus formosus* and *Mediorhynchus papillosus* were the most prevalent species. *Microtetrameres cruzi* was present only in three birds but it caused considerable damage to the proventriculus. R.T.L.

461—American Potato Journal.

a. PETERS, B. G., 1953.—" The golden nematode in Britain." **30** (9), 226–230.

(461a) In this text of a paper read to Connecticut potato growers, Peters gives a general account of the potato root eelworm in Britain, its effects, and the limited possibilities of control. He shows that, in spite of great differences in area and population, Britain harvests about as many potatoes as the U.S.A. B.G.P.

462—Anais da Academia Brasileira de Ciencias.

a. TRAVASSOS, L., 1953.—" Algumas observações sôbre a bionomia do *Schistosoma mansoni* Sambon, 1907, feitas na Cidade do Salvador, Bahia." **25** (2), 157–165.

(462a) Between August, 1951 and March, 1952 a total of 120,281 planorbids collected at various points in the environs of Salvador (Brazil) were examined and 495 (0·41%) contained cercariae, almost exclusively those of *Schistosoma mansoni*. In a few specimens there were cercariae of echinostomids and plagiorchids, in two those of a strigeid and in one those of a bucephalid. Allowing for a rate of flow in the ditches of one metre per minute, and for the fact that *S. mansoni* cercariae were shown to remain infective to mice for up to 19 hours after leaving the mollusc, it is estimated that cercariae capable of infecting man may be present at distances of up to 1 km. from the nearest infected molluscs. In the tropical climate of Salvador schistosome cercariae were found to be infective to mice at all times during the day or night throughout the period from October to March in which they were studied. Heavy infections were produced experimentally in opossums (*Didelphis marsupialis aurita*) which are abundant in the vicinity of the city and could therefore act as natural reservoir hosts. In the adult worms obtained from these infections the number of testes varied from 3 to 13, although the majority of specimens had from 6 to 8. Thirty-one different arrangements of testes are sketched: frequently some of the testes were situated much more posteriorly than normal, which is interpreted as an initial phase of intersexuality. P.M.B.

463—Anais do Instituto de Medicina Tropical. Lisbon.

a. TRINCÃO, C., PARREIRA, F., GOUVEIA, E. & FRANCO, A., 1953.—" Alguns dados relativos à cito-química leucocitária na ancilostomíase." **10** (2), 181–187. [English & French summaries pp. 186–187.]
b. HAWKING, F., 1953.—" Recent investigations on filariasis." **10** (2), 299–311. [French & Portuguese summaries pp. 310–311.]
c. PASSOS, J., 1953.—" Poderão as helmintíases alterar a aneosinofilia da febre tifóide? Contribuição para o seu estudo." **10** (3, Fasc. I), 1003–1013. [English summary p. 1013.]
d. FERREIRA, E. C., 1953.—" Distribuição e incidência de algumas endemias de Angola." **10** (3, Fasc. III), 1739–1775. [English summary p. 1775.]
e. DELGADO, J. A. DE B. A., 1953.—" Incidência e condições de desenvolvimento das doenças endémicas na área sanitária de Tete e causas das doenças da nutrição." **10** (3, Fasc. III), 1779–1792. [English summary p. 1792.]

(463a) In human cases of hookworm anaemia there were increases in the alkaline phosphatase but little changes in the polysaccharide, lipid and peroxidase contents of the leucocytes. M.MCK.

(463b) In this lecture given at the Instituto de Medicina Tropical, Lisbon, Hawking summarizes his published work on the periodicity of *Dirofilaria aethiops* and discusses: (i) why the microfilariae accumulate in the blood and (ii) how do the microfilariae know when to stay in the lung? He also discusses the importance of hetrazan in the chemotherapy of filariasis. M.MCK.

(463c) Of eleven patients with typhoid fever none showed eosinophils in the peripheral blood at the commencement of the fever although faecal examination showed that seven had *Ancylostoma duodenale*, two *Ascaris lumbricoides*, one *Enterobius vermicularis* and one *Taenia saginata*. M.MCK

(463d) About 90% to 100% of the native population in the Malange, Congo and Benguela provinces of Angola harbour intestinal helminths. Ferreira gives the incidence in various localities in terms of percentage infected with hookworm and percentage with other parasitic diseases and tabulates the number of cases of schistosomiasis recorded annually for various localities of each province from 1946 to 1950. This disease, caused almost entirely by *Schistosoma haematobium*, is most common in scattered areas of Congo, Huila and Benguela and is spread mainly through the movement of large labour forces. Curiously, the rivers Zaire and Cassai mark an extraordinarily distinct boundary between *S. haematobium* in Angola and *S. mansoni* in the Belgian Congo. M.MCK.

(463e) In the area around Tete in Mozambique, hookworm incidence has increased from 36 cases in 1947 to 83 in 1951, and in that year 260 cases of ascariasis and 73 of enterobiasis were recorded. Filarial infections were very rare but *Schistosoma mansoni* and *S. haematobium* were present in all of five localities examined; in several instances the incidence was over 50%. M.MCK.

464—Anales de Edafología y Fisiología Vegetal. Madrid.

a. MIHELČIČ, F., 1953.—"Nemátodos de los suelos de humus. Contribución al conocimiento de la microfauna de los suelos de humus." **12** (11), 879–905. [German summary p. 904.]

(464a) In a study of the nematodes in Alpine soils at altitudes of 200 m. to 2,300 m., 48 species were identified, 21 in grassland, 25 in beech woods and 23 in coniferous forests (in mosses, dead leaves and soil), 21 in cultivated pastures and 35 in open land. The species are tabulated with their abundance and frequency. From moist earth around the roots of *Ranunculus flamula* Mihelčič reports *Diploscapter nodifera* n.sp., of which only females were found. The new species is distinguished from *D. coronata* by the structure of the anterior end; this is slightly narrower than the rest of the body in front of the oesophagus and has four lips, the dorsal and ventral ones being present as small hooks with granular thickenings where they join the wall of the buccal capsule. It is further differentiated by the length, 0·4 mm. to 0·45 mm., and by the long and narrow tail. The other 47 species are listed with their geographical distribution and oecology and are discussed according to their habitats. Although soil nematodes contribute little to humus formation, they are considered to be important indicators of humidity, of the amount of oxygen, carbon dioxide and nitrogen present, and of the degree of decomposition in the substrate. They are seemingly little influenced by temperature or ionic concentration. M.MCK.

465—Anales de la Escuela Nacional de Ciencias Biológicas. Mexico.

a. FLORES-BARROETA, L. & GROCOTT, R. G., 1953.—"Helmintos de la República de Panamá. VIII. Sobre dos trematódos del género *Ochetosoma* Braun, 1901." **7** (1/4), 9–14. [English summary p. 14.]

b. CABALLERO Y C., E., 1953.—"Estudios helmintológicos de la región oncocercosa de México y de la República de Guatemala. Nematoda. 7a parte. Nueva especie del género *Spironoura* Leidy, 1856." **7** (1/4), 145–149. [English summary p. 148.]

(465a) Flores-Barroeta & Grocott redescribe *Ochetosoma ellipticus* from *Xenodon colubrinus* and *Eurythrolamprus aesculapii*, and *Ochetosoma brevicoecum* (Caballero, 1941) n. comb. for *Renifer brevicoecus* from *Xenodon colubrinus* in the Panama Canal Zone. M.MCK.

(465b) *Spironoura guatemalana* n.sp. parasitic in the intestine of *Rana* sp. is described and figured from Guatemala. This species is distinguished from *S. brevispiculata* and

S. ranae by the number and arrangement of the pre-anal and post-anal papillae. It is distinguished also by the size of the spicules, 0·771 mm. to 0·798 mm., and by the structure of the gubernaculum which is conical, consisting of two branches terminating [distally] in a point with their proximal ends granular, oval and unchitinized. M.MCK.

466—Anales de la Facultad de Medicina de Montevideo.

a. CANABAL, E. J., DIGHIERO, J., S[illegible]IZACQ, C. V., AGUIRRE, C. V., PURCALLAS, J. & BALDOMIR, J. M., 1953.—" Historia de la equinococosis cardíaca en el Uruguay." **38** (11/12), 465–479. [English summary p. 477.]

467—Anales del Instituto de Biología. Mexico.

a. CABALLERO Y C., E., GROCOTT, R. G. & ZERECERO Y D., M. C., 1953.—" Helmintos de la República de Panamá. IX. Algunos tremátodos de aves marinas del Océano Pacífico del Norte." **24** (2), 391–414.

b. BRAVO H., M., 1953.—" Dos nuevos tremátodos digeneos de peces de las costas del Pacífico." **24** (2), 415–424.

(467a) Caballero *et al.* describe and figure *Mesostephanus microbursa* n.sp. from *Pelecanus occidentalis californicus*. It differs from *M. odhneri* in the size of the cirrus sac (0·494–0·532 mm. × 0·103 mm.), size and number of eggs and in having larger yolk glands; although similar to *M. fajardensis*, it is distinguished by the size and number of eggs, the size of the adhesive organ and by the vitelline ring being open posteriorly. *Mesostephanus appendiculatoides* and *Galactosomum puffini* from *P. occidentalis californicus*, *Cardiocephalus brandesii* from *Larus atricilla*, *Stephanoprora singularis* from *Phalacrocorax vigua vigua*, and *S. denticulata* from both *L. atricilla* and *P. vigua vigua* are redescribed. M.MCK.

(467b) Two new trematodes are described from fish of the Mexican Pacific. *Apocreadium caballeroi* n.sp. from the small intestine of a *Sufflamen* sp. differs from *A. mexicanum*, *A. longisinosum*, *A. balistes* and *A. synagris* in the shape of testes, in its pointed, bent, posterior tip and in the hermaphrodite duct being exceptionally short. *Xystretrum caballeroi* n.sp., the first *Xystretrum* recorded from the Pacific, lives in the urinary bladder of *Pachynathus capistratus*. The oral sucker is larger than the ventral, which distinguishes it from the other (Atlantic) species, *X. solidum* and *X. pulchrum*. A key is given to the three species. M.MCK.

468—Animal Health Leaflet. Ministry of Agriculture and Fisheries. London.

a. ANON., 1953.—" Husk or hoose in calves." No. 14, 3 pp. [Revision of 1948 Leaflet.]

469—Annales Pharmaceutiques Françaises.

a. VALETTE, G., CAVIER, R. & DEBELMAS, J., 1953.—"Action anthelminthique des constituants des essences végétales." **11** (11), 649–653.

(469a) Experiments were conducted on *Rhabditis macrocerca* and *Ascaris suum* in vitro and on *Syphacia obvelata* and *Aspiculuris tetraptera* in white mice to determine the anthelmintic properties of the chemical constituents and related compounds of some vegetable extracts. Cinnamic derivatives, aromatic aldehydes, alkylphenols and terpene derivatives were tested in aqueous emulsions with gum arabic at concentrations of M/100 or, with the more powerful ones, at 3M/1000 and 5M/1000. The most active chemicals were carvacrol, eugenol, *iso*eugenol, cinnamic aldehyde, salicyclic aldehyde, α-pinene and geraniol, but the toxicity of some of these was such that 20% to 50% of the mice were killed. It is concluded that (i) the aldehyde radicle seems to promote anthelmintic activity, at least in the cinnamic series, (ii) an unsaturated chain on the benzene nucleus increases activity, (iii) a free phenol radicle increases the efficacy but also the toxicity and (iv) efficacy is reduced by hydrogenation of the benzene ring. [It is stated that a detailed account of this research appeared in a thesis presented by Debelmas to the University of Paris in 1953.] M.MCK.

470—Annales des Sciences Naturelles. Zoologie et Biologie Animale.

a. CAVIER, R. & SAVEL, J., 1953.—" Les conditions de vie de l'ascaris du porc, *Ascaris lumbricoides* Linné, 1758, hors de l'organisme de l'hôte en milieu aseptique." 11e Série, **15** (1), 57–70.

(470a) Working on the *in vitro* culture of *Ascaris lumbricoides* from pigs Cavier & Savel found that the optimum sodium chloride concentration is 1%, that when the liquid is changed daily the volume (between the limits of 50 c.c. and 500 c.c. per worm) is of little importance, and that the optimum *p*H is about 8. Of the nine media tested a modified Tyrode's solution (from which the disodium orthophosphate was omitted and the concentration of sodium bicarbonate increased to 0·15%) allowed the maximum survival of 22 days. Merthiolate in various concentrations, natural antibiotics and sulpha drugs were tested against the bacterial flora of the cultures; Adiazine (paraminophenylsulphamido-2-pyrimidine) and Gantrisine (3-4-dimethyl-5-sulphamido-isoxazol) gave the greatest degree of asepsis combined with lowest toxicity to the worms. S.W.

471—Annales de la Société Belge de Médecine Tropicale.

a. FAIN, A., THIENPONT, D., HERIN, V. & DERAMÉE, O., 1953.—" Observations sur *Schistosoma rodhaini* Brumpt au Ruanda-Urundi, et description de la cercaire de ce schistosome." **33** (5), 423–443. [Flemish summary pp. 440–441.]

b. SCHWETZ, J., 1953.—" Sur le problème bilharzien de Sakania (Katanga, Congo Belge)." **33** (5), 463–482. [Flemish summary p. 476.]

c. THIENPONT, D., HERIN, V., FAIN, A. & DERAMÉE, O., 1953.—" Étude clinique et histo-pathologique de la bilharziose canine à *Schistosoma rodhaini* au Ruanda-Urundi." **33** (5), 487–494. [Flemish summary p. 494.]

d. SCHWETZ, J., BAUMANN, H. & FORT, M., 1953.—" Sur les schistosomes actuellement (en 1953) connus en Afrique." **33** (6), 687–696. [Flemish summary p. 693.]

(471a) At Musha (Ruanda-Urundi) the reservoir hosts of *Schistosoma rodhaini* were found to be *Felis serval*, *Oenomys hypoxanthus*, *Rattus* (*Mastomys*) *coucha ugandae*, *Pelomys fallax concolor* and *Otomys irroratus vulcanius*. The faeces and urine of local inhabitants living close to sites where infected *Biomphalaria alexandrina pfeifferi* were found were all negative and an attempt to infect a human volunteer was unsuccessful. Laboratory-bred specimens of the local strain of *B. a. pfeifferi* when maintained at temperatures of 18°C. to 23°C. began to emit cercariae on the 39th day after experimental infection. Eggs of *S. rodhaini* appeared in the faeces of experimentally infected white mice on the 38th to 43rd day. Adult worms were found in the liver of experimentally infected *Aethomys* (after 30 days), *Cricetomys* (47 days), cats (58 days), gerbils and *Mus gratus*. No eggs were found in the intestine but in some animals there were eggs in the liver. Eggs appeared on the 40th day in the faeces of the one dog which was experimentally infected and when killed on the 52nd day there were normal canine schistosome lesions with adult males and females in the liver and mesentery. The authors conclude that the following differences separate *S. rodhaini* from *S. mansoni*: (i) the natural hosts of *S. rodhaini* are dogs and wild rodents but man seems to be refractory, (ii) the development of *S. rodhaini* takes slightly longer in the intermediate host and slightly less time in the definitive host, (iii) the length of the adult *S. rodhaini* in natural infections is 5 mm. to 9 mm. and varies more widely in experimental infections, (iv) the cercaria has an excretory canal which bifurcates into two short branches before joining the excretory vesicle and has five instead of six penetration glands on either side of the body, (v) the female genital tract contains only one egg (usually in the ootype) which measures on an average $118\mu \times 35\mu$ in specimens from dogs and $115\mu \times 37\mu$ in those from mice, the smallest being $110\mu \times 31\mu$ and the largest $133\mu \times 38\mu$. The mature eggs with normal embryos found in faeces measured $148\mu \times 54\mu$ from dogs and $150\mu \times 60\mu$ from mice. Small eggs with granular contents similar in size and appearance to those normally in the ootype were found in the faeces of various animals and are thought to have been deposited prematurely and arrested in their development. P.M.B.

(471b) The incidence of intestinal and vesical schistosomiasis was studied at Sakania (Belgian Congo). This town which is divided into three parts, the railway camp where the

incidence of intestinal infection was 16% and of urinary infection 44%, the native town where the incidence was 37% and 57·6% respectively, and the mission compound with incidence rates of 40·5% and 70%. An attempt was made to eradicate the Physopsis and Planorbis in the small Lubembe river. This is the sole source of infection and separates the native town and the mission compound. The incidence in molluscs varied from 1·43% to 8·4% according to site. Infections with *S. rodhaini* and *S. mansoni* developed in white mice from cercariae obtained from planorbids. Lateral-spined eggs were found in a wild rodent, *Dasymys bentleyae*, and are believed to belong to *S. mansoni* var. *rodentorum* recently described by Schwetz at Albertville [see Helm. Abs., **22**, No. 76d]. In schoolchildren at the mission at Mokambo (50 km. north of Sakania) the incidence of urinary infection averaged 45% and of intestinal infection 5%. In two streams the incidence of cercariae in Physopsis was 1·3% of 464 and 1·6% of 60. At the mission at Kipushia (107 km. south-west of Sakania) the incidence in schoolchildren averaged 35% for urinary infection and 10% for intestinal infection. Physopsis were numerous but only one out of 170 was infected. P.M.B.

(471c) Of 32 dogs from the Musha region of the Belgian Congo near the river Akanyaru which were examined between January 1952 and July 1953, 19 were infected with *Schistosoma rodhaini*. No dog from the higher parts of Ruanda-Urundi (Nyanza & Astrida) was found infected. Symptoms varied widely according to the degree of infection and in the most heavily infected dogs included eczematous lesions, especially on the legs, head and tail, loss of hair and increasing emaciation. Histopathological examination of four heavily infected animals showed very marked changes in the liver, pancreas and small intestine, associated with the deposition of eggs. P.M.B.

(471d) Schwetz *et al.* review, give brief descriptions and illustrate with clear photomicrographs the eight schistosomes recorded in Africa. These are *Schistosoma haematobium*, *S. mansoni*, *S. bovis*, *S. mattheei*, *S. intercalatum*, *S. rodhaini*, *S. mansoni* var. *rodentorum* and *S. margrebowiei*. There is a short account of their intermediate hosts. S.W.

472—Annales Universitatis Mariae Curie-Skłodowska, Lublin.

a. SZKUTNIK, Z., 1953.—"Zagadnienie wyjaławiania wągrowatego mięsa wieprzowego." Sectio DD, **8** (2), 17–31. [English & Russian summaries pp. 30–31.]

(472a) Pork infected with *Cysticercus cellulosae* and isolated cysts were placed in 0·5% to 6% salt solutions at 3°C. to 5°C. for varying lengths of time. The death of the cysticerci was determined in a solution of 50% bile in physiological saline at 42°C. or by staining with Grenacher's alum carmine after mechanical extrusion of the heads. A 4·5% saline solution was the lowest concentration to ensure death of all the cysts. As the speed of penetration of a solution into pork is not uniform, only the duration of the pickling period is of practical importance. The author found seventeen live cysticerci after using the prescribed method of pickling in Poland, i.e. a 20% solution for 21 days, and concludes that only with the aid of low temperatures can pork be fully sterilized. G.I.P.

473—Annali della Facoltà di Medicina Veterinaria. Pisa.

a. CASAROSA, L., 1953.—"Sulla infestione sperimentale della cavia con uova embrionate di *Neoascaris vitulorum*. (Nota definitiva.)" **6**, 60–76. [English & French summaries p. 74.]
b. BONO, G. C. DEL, 1953.—"Moria nel piccione da *Tetrameres fissispina* (Diesing, 1861)." **6**, 77–86. [English & French summaries pp. 85–86.]
c. EMDIN, R. & BELLI, G., 1953.—"La formula leucocitaria di cavie sperimentalmente infestate con larve di *Metastrongylus elongatus*." **6**, 87–94. [English & French summaries p. 94.]

(473a) Casarosa illustrates and describes histopathological changes in the liver, lungs and kidneys of guinea-pigs which followed the administration of one to five doses each of 200–500 embryonated eggs of *Neoascaris vitulorum*. As the lesions were very similar to the green spots previously observed by him in calves the latter were probably due to larval ascarids. M.McK.

(473b) At a pigeon-rearing station on the Leghorn plain, Italy, *Tetrameres fissispina* caused a high death rate. The pathological condition of the proventriculus and other organs is illustrated and described. The disease is believed to be common in the provinces of Leghorn and Pisa. M.MCK.

(473c) There was an increase of eosinophilia when five guinea-pigs were given massive infections of *Metastrongylus elongatus*. In two animals given more than one infective dose the peak percentage occurred after the second infection. The remarkable basophilia reported by Porter in *J. Parasit.*, 1937, **23**, pp. 73–82 was not confirmed. M.MCK.

474—Anzeiger für Schädlingskunde.

a. HOMEYER, B., 1953.—" Die fluoreszenzoptische Vitalanalyse inaktiver Nematoden." **26** (9), 137–140.

(474a) Homeyer continues his earlier work [see Helm. Abs., **22**, Nos. 236a & 238a] on the determination of death in plant nematodes by staining with acridine orange and examining under the fluorescence microscope. He now reports that *Aphelenchoides ritzemabosi* and *A. fragariae* both appear green when living and red when dead and that the technique is of great value, especially in tests of nematicides, as a rapid and reliable means of determining death in nematodes. A.E.F.

475—Archiv für Experimentelle Pathologie und Pharmakologie.

a. ANDERSON, H. H. & HURWITZ, G. K., 1953.—" Dodecylamine and other agents active against *Ascaris lumbricoides* and their toxicity in mammals." **219** (1/2), 119–129.

(475a) Using the effect of hexylresorcinol as a standard, Anderson & Hurwitz have tested 19 chemicals against pig Ascaris *in vitro*. Dodecylamine, γ-chloroallyl dodecylamine and allyl isothiocyanate killed all worms in 30 minutes; 1-chloro-3-bromopropene-1, tetradecylamine, 2-chloro-3-bromopropene-1, and 1,4-dibromo-2-chloro-2-butene killed all or some worms in 30–60 minutes; the other chemicals were inactive. Hexylresorcinol, dodecylamine and γ-chloroallyl dodecylamine were slightly toxic to rats and mice, allyl isothiocyanate moderately so. The irritant effect on the membranes of rabbit's eyes, and the effects on the surface tension of suspensions in distilled water were also studied. Dodecylamine produced dermatitis in one of six people who worked with it. S.W.

476—Archiv für Experimentelle Veterinärmedizin.

a. IPPEN, R., 1953.—" Zur Pathogenität des *Strongyloides ransomi* unter besonderer Berücksichtigung seines Sitzes in der Schleimhaut der Darmwand." **7** (1), 36–57.
b. MÜLLER, B., 1953.—" Über die Entwicklung und Differenzierung der *Trichonema*-Larven in der Darmwand des Pferdes." **7** (1), 58–84; (2), 153–175.

(476a) In order to supplement earlier work on the pathogenicity of *Strongyloides ransomi* infection, Ippen repeatedly infected four young pigs intracutaneously with larvae over a period of three weeks. Reddening of the skin and pustule formation was noted at the site of infection. Blood tests showed erythropenia, eosinophilia and hyperleucocytosis which are ascribed to the chemotactic effect of toxins from migrating larvae. The pigs were killed and examined post mortem at the end of the period. Haemorrhagic spots were found in the lungs and parthenogenetic females and their eggs were found in scrapings of the mucous membrane of the duodenum and the beginning of the jejunum. The skin at the site of infection and the lung tissue showed migrating larvae. Examination of a large number of sections of the intestinal mucosa confirmed that parthenogenetic females are present in the duodenum and beginning of the jejunum. The anterior and middle of the worms were found in the deep mucosa in the epithelium of the intestinal glands, while the posterior and tail end were coiled in the epithelium of the villi. These findings of larvae in the skin and lungs and the localization of *Strongyloides ransomi* in the intestine confirm and complete earlier findings recorded in the literature. A.E.F.

(476b) After a survey of the literature on Trichonema (supported by 107 reference Müller reports on her study of the intestines of 53 horses from the Leipzig district, all b four of which were positive for Trichonema. A total of 3,173 larvae were examined an divided into three developmental groups: (i) larvae without mouth tube or capsule, (ii) larva with a tube-like mouth structure, and (iii) larvae with mouth capsules. Larvae of the secon group develop after ecdysis into those of the third which are subdivided into 21 types an distinguished morphologically by such factors as shape of mouth capsule and intestinal cell and size of oesophagus in relation to that of the whole worm. Each type corresponds to species [but no specific names are given]. Sexual differentiation is possible only in larva of at least 4·5 mm. in length. Müller also describes the four types of nodules, each of whic contained one larva, found in the intestinal wall. The morphological differences in the nodule corresponded to the different species of Trichonema. Larvae eventually escape from th nodules and reach maturity in the intestine after a further ecdysis. A.E.I.

477—Archives Belges de Dermatologie et de Syphiligraphie.

a. LAPIÈRE, S., 1953.—" Filariose oculaire et cutanée à *Onchocerca volvulus*." **9** (3), 192–19 [Discussion pp. 193–194.]

478—Archives of Disease in Childhood.

a. JONXIS, J. H. P. & BEKIUS, H., 1953.—" The treatment of *Ascaris* infection with Velardon.' **28** (140), 329–331.

(478a) Velardon, a preparation containing papain, the dried latex of the unripe fruit o *Carica papaya*, was tested for its anthelmintic action against *Ascaris lumbricoides* in 20 children under eight years of age in the University Hospital at Groningen. A dose of 20 gm. Velardon (which contains 10 gm. of papain activated with 0·5 gm. of cysteine) was administered to each child. In 15 of the children no eggs were found in the faeces after a single dose but in the five remaining cases a considerable number of worms was evacuated on subsequent treatment with oil of chenopodium. As the papain causes the worms to disintegrate in the intestine evacuation of worms rarely occurs in Velardon therapy. R.T.L.

479—Archives de l'Institut Pasteur d'Algérie.

a. BALOZET, L., 1953.—" Trématodes larvaires de l'Afrique du Nord: larves de Strigeida.' **31** (4), 381–396.

b. SIMITCH, T. & PETROVITCH, Z., 1953.—" La réinfestation de *Citellus citellus* pa *Hymenolepis nana* après le sommeil hibernal: est-elle possible?" **31** (4), 397–399.

(479a) Balozet describes *Prohemistomulum expeditum* n.sp. from the kidneys of *Ran ridibunda* caught in Algeria. Unlike most metacercariae they are not enclosed in cysts. The various measurements are tabulated with those of *Metacercaria szidatiai joyeuxii* which encysts in the muscles and with which it is not considered identical. The furcocercariae discharged by *Melanopsis algerica* were found to encyst in *Gambusia affinis* but efforts to obtain adul *Szidatia joyeuxi* by feeding the cysts failed with cats, mice etc. but were successful with *Malpolon monspessulana*. It is considered probable that the natural host is *Natrix viperina* R.T.L.

(479b) Eggs of *Hymenolepis nana* from a rat were administered to 20 *Citellus citellu* which had spontaneously lost their previous infection during the winter hibernation. A post-mortem examination no worms were found in two of them. The remaining 18 were the given two further infective doses. Sixteen failed to become infected and two harboured only one worm each. When, however, a single infective dose was given to 20 *C. citellus* captured wild after the hibernation period, 18 became heavily parasitized. From these experiment it is concluded that the pre-hibernation infection with *H. nana* in the first group create an effective immunity against further infection. M.McK.

480—Archives de l'Institut Pasteur du Maroc.

a. DOLLFUS, R. P., 1953.—" Miscellanea helminthologica maroccana V. Présence au Maroc d'*Aspidogaster conchicola* K. E. von Baer 1826 [Trematoda Aspidogastrea]." **4** (8), 492–495.
b. DOLLFUS, R. P., 1953.—" Miscellanea helminthologica maroccana VI. L'adulte et la métacercaire progénétique de *Ratzia parva* (M. Stossich 1904) [Trematoda Digenea]." **4** (8), 496–504.
c. DOLLFUS, R. P., 1953.—" Miscellanea helminthologica maroccana VII. Les *Szidatia* de *Natrix viperina* (Latreille, 1802) [Trematoda Digenea]." **4** (8), 505–512.
d. DOLLFUS, R. P., 1952.—" Miscellanea helminthologica maroccana VIII. Cystique polycéphale chez un *Meriones libycus* K. M. H. Lichtenstein 1823." **4** (8), 513–517.
e. DOLLFUS, R. P., 1953.—" Miscellanea helminthologica maroccana IX. Nouvelles récoltes de cystiques polycéphales chez des *Meriones*: *M. crassus* Sundevall 1842, *M. libycus erythrourus* J. Ed. Gray 1842, *M. persicus* (Blanford 1875)." **4** (8), 518–532.
f. DOLLFUS, R. P., 1953.—" Miscellanea helminthologica maroccana X. *Catenotaenia chabaudi* n.sp., de *Xerus* (*Atlantoxerus*) *getulus* (Linné 1758). [Cestoda Cyclophyllidea.]" **4** (8), 533–540.
g. DOLLFUS, R. P., 1953.—" Miscellanea helminthologica maroccana XI. Sur cinq espèces d'acanthocéphales, dont une du hérisson *Aethechinus algirus* (Duvernoy et Lereboullet 1840)." **4** (8), 541–560.

(480a) The presence of *Aspidogaster conchicola* in the pericardium of *Unio rhomboideus* is recorded for the first time in Morocco. M.MCK.

(480b) Dollfus re-examined progenetic metacercariae and adults from *Discoglossus pictus*, *Rana ridibunda*, *Zamenis hippocrepis*, *Tropidonotus viperinus* (obtained in North Africa) and from experimentally infected *Alytes obstetricans* and *Rana esculenta*. Contrary to his 1929 description he found that in the adult *Ratzia parva*, the cuticular spines persist from the metacercarial stage, the vitellaria may extend back beyond the posterior testis, the testes (usually faintly lobed) are sometimes smooth, the seminal receptacle and bipartite seminal vesicle are always filled with sperms, a rudimentary gonotyl appears to be present, and the excretory vesicle is at least as big as in the metacercaria. In the progenetic metacercaria he ascertained that the bipartite seminal vesicle is absent, the testes are dormant, the receptaculum seminis contains no sperm, and the vitellaria extend back a variable distance, as in the adult. Dollfus briefly discusses the relations of his own observations to those of Buttner. M.MCK.

(480c) From the oued Cherrat, Morocco, Dollfus describes and figures *Szidatia joyeuxi maroccana* n.f. and *S. nemethi* n.sp. from *Natrix viperina*. *S. nemethi* has an exceptionally large attachment organ, embracing the ventral sucker and vitellaria. *Szidatia joyeuxi* f. *maroccana* is twice as long as the normal *S. joyeuxi* and contains 11–16 (instead of 2–5) eggs in the uterus, and the vitellaria extend in front of the attachment organ. M.MCK.

(480d) Dollfus considers that a polycephalous cyst with 13 scolices found in the thoracic cavity of *Meriones libycus* near Béni-Abbès, Algeria, belongs to the same genus as two cysts, similar to *Taenia rileyi*, previously discovered in the same host. M.MCK.

(480e) Dollfus has identified as *Multiceps endothoracicus* some polycephalous cysts with scolices protruding externally which were taken from the abdominal cavity of *Meriones crassus*, *M. libycus erythrourus* and *M. persicus*, obtained from a breeding station in northern France. M.MCK.

(480f) Dollfus sets out in tabular form the principal characteristics of 13 species of *Catenotaenia*. One of these, *C. chabaudi* n.sp. from *Xerus* (*Atlantoxerus*) *getulus*, is closely related to *C. geosciuri* but has a well developed apical sucker, the testes (numbering 70–140) form a single group, the vagina is long and there are only 19 or 20 branches on each side of the uterus. It is the second species of *Catenotaenia* recorded from Morocco. M.MCK.

(480g) Dollfus records *Centrorhynchus picae* n.sp. from *Pica pica mauritanica*, and *Prosthorynchus charadriicola* n.sp. from *Charadrius hiaticula*. He assigns to *Macracanthorhynchus erinacei* a dubious specimen found in the large intestine of *Aethechinus algirus* and he ascribes to *Moniliformis moniliformis* auctorum some second-stage cysts found in the gut of *Bufo mauritanicus* and presumably derived from ingested insects. M.MCK.

481—Archives of Neurology and Psychiatry. Chicago.

a. INNES, J. R. M. & SHOHO, C., 1953.—" Cerebrospinal nematodiasis. Focal encephalomyelomalacia of animals caused by nematodes (*Setaria digitata*); a disease which may occur in man." **70** (3), 325–349.

(481a) This paper, of which a summary was presented to the First International Congress of Neuropathology held in Rome in 1952, presents a condensed account of publications dealing with the causation by immature *Setaria digitata* of the annual outbreaks of lumbar paralysis in sheep, goats and horses of the Middle and Far East. The following problems are discussed: clinically inapparent or masked helminthic infections of the nervous system; dual infection with virus and helminths; the migratory paths of the worms to the nervous system; and the possibility that helminths may be involved in the epidemiology of neurotropic virus infections. Relevant experimental observations are cited in support of the view that the nervous system may be a favoured anatomical site for parasites in unnatural hosts. R.T.L.

482—Archivio Italiano di Scienze Mediche Tropicali e di Parassitologia.

a. CAPOCACCIA, L. & MASTRANDREA, G., 1953.—" Ulteriori esperienze sulle proteasi vegetali nelle infestazioni da elminti (*Enterobius vermicularis*)." **34** (11), 588–592. [English, French & German summaries p. 592.]

b. LIPPARONI, E., 1953.—" Sulla anchilostomiasi nella zona del medio Uebi Scebeli." **34** (11), 593–611. [English, French & German summaries pp. 609–610.]

(482a) The authors treated 42 patients with *Enterobius* infection with Vermizym. Details of pre-treatment, dose rates and hygienic measures are given. Twenty-nine patients were cured, two were doubtful and eleven remained infected. M.MCK.

(482b) Lipparoni discusses his findings among 5,126 clinical cases of ancylostomiasis from the Middle Webi Shebeli area of Somalia, observed from 1935 to 1952. Of these, 15·84% were nomadic or semi-nomadic people and the remainder mostly agricultural. Only three were European. Men numbered 67·37% of the total; they were probably more exposed to infection than women as they do the agricultural tasks. In most cases other helminths were also present. Old people were rarely afflicted. From a separate study of 2,957 women in the area it was found that 39·86% habitually ate earth during pregnancy and that among the agricultural population 60%–70% were geophagus, thereby probably ingesting infective larvae. The symptoms of anaemia may have arisen from shortage of iron in the diet, especially prevalent among the nomads who live mainly on milk. The pellagroid syndrome was fairly frequent and Lipparoni suggests that the common deficiency of riboflavin might lead to clinical manifestations of ancylostomiasis. Although the incidence of hookworm was high, severe symptoms were rare. The author reviews the desirable preventive measures and the anthelmintics commonly used for hookworm infection. M.MCK.

483—Archivos Médicos de Cuba.

a. BASNUEVO, J. G. & SOLER, F., 1953.—" 28 casos de taeniasis saginata, tratados con la mezcla hexilresorcinol-tetracloroetileno." **4** (6), 625–626.

(483a) As a treatment for *Taenia saginata* infection, Hydroxylen (a mixture of 1 gm. of hexylresorcinol and 4 c.c. of tetrachlorethylene) was administered with peanut oil by duodenal sound to 20 patients, and with peanut and chenopodium oil in gelatin capsules to eight patients. Eighteen of the first and seven of the second group were cured. Eight others were treated but were not under observation long enough to determine the results. M.MCK.

484—Archivos de Pediatría del Uruguay.

a. PÉREZ FONTANA, V., 1953.—" Enfermedades parasitarias de importancia social. La hidatidosis en la infancia con especial referencia a su aspecto médico-social." **24** (1), 35–36.

485—Archivos de la Sociedad de Biología de Montevideo.

a. TALICE, R. V. & GURRI, J., 1953.—"Sobre biología de *Taenia echinococcus*. Nota previa." **20** (1/3), 61–64. [English summary p. 64.]

(485a) In two successive experiments a pair of month-old puppies from the same litter were fed on pig viscera infected with *Echinococcus granulosus*. Three months later only one dog in each case was infected. Mature tapeworms from the dogs were fed to a seven-month-old calf, which was examined post mortem 16 months later. [In the English summary it is stated that the calf was fed with ova from the dogs' faeces.] The lungs and liver were riddled with small sterile cysts which measured at most 3–4 mm. in the liver and 1 mm. in the lungs. Quantities of the cysts were administered to two other puppies but no infection was observed at autopsy three months afterwards. The movements of adult worms were cinematographically recorded and it was found that overall narrowing and lengthening of the body began at the distal end and worked forward to the suckers. The ratio of the shortest to the greatest possible body length was 1:4 and sometimes up to 1:6. The rostellum moved backwards and forwards or round and round, the hooks moved laterally but feebly and two of the suckers descended and two ascended alternately. Wave movements progressed along the body slowly and smoothly but halted slightly at the junction of segments as if overcoming an obstacle. Internally a slight displacement of granules was observed in the cortex and a curious streaming of eggs occurred down the centre of mature proglottides during their contraction. M.MCK.

486—Archivos Uruguayos de Medicina, Cirugía y Especialidades.

a. BALDOMIR, J. M., CANABAL, E. J., DIGHIERO, J., PURCALLAS, J., AGUIRRE, C. V. & SUZACQ, C. V., 1953.—"Valor del electrocardiograma para establecer el diagnóstico diferencial entre los aneurismas y los quistes hidáticos del ventrículo izquierdo." **42** (5/6), 273–291. [English summary pp. 289–290.]

b. FISCHER, J. T. & TRAIBEL, J., 1953.—"Hipertiroidismo hidatídico." **43** (3/4), 145–155. [English, French & German summaries pp. 154–155.]

487—Archivos Venezolanos de Puericultura y Pediatría.

a. HARTZ, P. H., 1953.—"Histopatología del colon en la tricocefalosis masiva de los niños." **16** (48), 209–220. [English summary p. 219.]

b. BARRERA MONCADA, G., 1953.—"Tratamiento enzimático (papaína) de algunas parasitosis intestinales. Primeros resultados en Venezuela." **16** (49), 391–402. [English & French summaries pp. 401–402.]

(487a) [This is a translation of a paper published in *Docum. Med. geogr. trop.*, **5**, 303–313. For abstract see No. 526a below.]

(487b) Vermizym, a papain preparation, was administered to 38 patients with *Ascaris*, *Necator* or *Trichuris* in the form of 25–75 tablets (5–15 gm. of papain) to adults, and 210–420 sweets (about 6·6–13 gm. of papain) to children. Twenty-four became negative and few toxic effects were observed. M.MCK.

488—Arquivos da Faculdade de Higiene e Saúde Pública da Universidade de São Paulo.

a. MEIRA, J. A., 1953.—"Esquistossomose mansoni." **7** (2), 187–230. [English summary pp. 220–222.]

b. FERREIRA, J. M. & ALVARES CORRÊA, M. O., 1953.—"Helmintíases entre escolares da cidade de São Paulo, com especial referência à esquistosomíase mansônica." **7** (2), 257–269. [English summary pp. 268–269.]

(488a) Meira reports on 28 cases of schistosomiasis mansoni with liver and spleen involvement. M.MCK.

(488b) Faecal examination of 5,536 schoolchildren in districts of São Paulo adjacent to the rivers Tietê and Pinheiros (*Australorbis* occurs in both) showed that intestinal helminths

were common and that *Schistosoma mansoni* occurred in 32. Twenty of these cases were treated, nine with intramuscular injections of repodral and eleven with miracil-D. All the former and ten of the latter were cured but eight of these showed toxic symptoms. Other common intestinal helminths were also treated. M.MCK.

489—Arquivos da Universidade da Bahia. Faculdade de Medicina.

a. SÁ OLIVEIRA, E. DE, PONDÉ, A. & MILTON, G., 1953.—" Ligadura do tronco celíaco. (Registo de um caso, em que foi praticada na forma hépato-esplênica da esquistossomose americana, em período descompensado.)" **9**, 25–31. [English summary p. 30.]

(489a) A case of schistosomiasis mansoni with liver and spleen complications which was treated by ligature of the coeliac artery is described. M.MCK.

490—Arzneimittel-Forschung. Aulendorf.

a. OELKERS, H. A., 1953.—" Wirkungswert und Haltbarkeit von *Filix*-Extrakten." **3** (12), 623–627.

(490a) Oelkers confirms that there is considerable variation in the activity of different male fern extracts. The activity, however, does not appear to deteriorate with keeping as extracts kept at 30°C. for three to six months and preparations kept for some years under the conditions of a chemist's shop were still active. S.W.

491—Atti della Società Italiana delle Scienze Veterinarie.

a. ROMBOLI, B., 1953.—" Bronchiti e polmoniti da elminti in patologia comparata." **7**, 97–174. [English & French summaries pp. 149–151. Discussion pp. 174–176.]
b. BIONDO, G., 1953.—"Osservazioni sulla composizione del latte delle vacche con echinococcosi." **7**, 258–260. [English & French summaries p. 260. Discussion pp. 260–261.]
c. CARATI, M., 1953.—" Necrosi acuta del pancreas da *Ascaris suilla* nel suino." **7**, 588–596. [English & French summaries p. 596.]
d. COLOMBO, S., 1953.—" Ricerche parassitologiche sulla fauna del Parco Nazionale del Gran Paradiso." **7**, 597–599. [English & French summaries pp. 598–599.]
e. DEIANA, S., 1953.—" Broncopolmonite da *Schistosoma bovis* (Sonsino 1876) nei ruminanti (rilievi anatomo ed istopatologici)." **7**, 615–616. [English & French summaries p. 616.]
f. PANEBIANCO, F., 1953.—" La tetrameriosi del pollo—prime osservazioni della malattia in Italia." **7**, 659–661. [English & French summaries pp. 660–661. Discussion pp. 661–662.]
g. CASAROSA, L., 1953.—" La microascaridiosi sperimentale del vitello ed i suoi rapporti con le 'macchie verdi' del vitello e vitellone della patologia spontanea." **7**, 671–677. [English & French summaries pp. 676–677. Discussion p. 678.]
h. MEDDA, A., 1953.—" Nuovo metodo di esame delle feci per la ricerca di uova di elminti e di oocisti di coccidii e di globidii." **7**, 724–731. [French & German summaries p. 730.]

(491a) This is a comparative study of the bronchitis and pneumonia associated with larval and adult helminths developing in the alveoli and respiratory tract of the lung. In the first part of the paper Romboli reviews the parasites according to genera, including ascarids, strongylids, hookworms, *Spirocerca*, schistosomes, *Fasciola* and cysticerci, and discusses infections caused by invading larvae of ascarids and strongylids. In the second part he discusses the lesions caused by parasites that undergo their biological cycle in the bronchi and trachea, e.g. *Dictyocaulus* in sheep, cattle and equines, metastrongyles in swine, *Crenosoma* in fox, *Paragonimus* in animals and man, *Spirocerca* and *Filaria osleri* in dog, *Cystocaulus* in sheep, *Capillaria aerophila* in fox and cat, and *Syngamus*, *Cyathostoma* and monostomes in birds. Catarrhal pneumonia caused by bacterial complications commonly accompanies such infections. Finally the author reviews the pathology of parasites that, although living in the bronchi, can reach the alveoli and induce inflammation; he outlines the host reactions to lungworms in sheep and goats (protostrongyliasis, cystocauliasis and muelleriasis), and in roe-deer, deer, chamois, fox, marten, badger and leporines. The article is illustrated by 26 photomicrographs and has a bibliography of 546 references. M.MCK.

(491b) Abnormalities in the viscosity and in the percentages of protein and fat were observed in the milk of 13 out of 17 cows which were subsequently found at autopsy to have hydatid cysts. It was also found that the abnormal viscosity of the milk was associated with hyperviscosity of the blood serum. M.MCK.

(491c) Carati describes an acute necrosis of the pancreas of a pig in which the pancreatic duct was blocked by an *Ascaris lumbricoides*. M.MCK.

(491d) Colombo records the results of his examination of the faeces of foxes, wild goats and chamois in the Parco Nazionale del Gran Paradiso. R.T.L.

(491e) [A fuller account of this paper appears in *Riv. Parassit.*, **14**, 181–190. For abstract see Helm. Abs., **22**, No. 258b.]

(491f) *Tetrameres fissipina* is reported for the first time in domestic fowl in Italy at Ganzirri, Messina. Small serous spots were observed on the outside of the glandular stomach together with catarrhal enteritis in the small intestine. Both males and females were embedded in the gastric glands, and males and ova occurred in the mucus. All the parasitized birds were thin and anaemic. M.MCK.

(491g) Casarosa describes the pathological and histological findings in three calves examined post mortem ten days after 200, 400 and 1,200 ova of *Neoascaris vitulorum* had been administered respectively. Lesions of the "green spot" type were observed in the lungs, liver and kidneys; the extent of lung infections was proportional to the size of the infective dose. The perihepatic and peribronchial glands were enlarged and were greenish in colour in the calf given 1,200 ova. It is concluded that the "green spot" may be caused by ascarids. M.MCK.

(491h) Medda describes in detail a technique for collecting helminth ova from cattle faeces. It is based on the property of the ova to adhere to the walls of glass vessels while sedimenting and combines sieving, sedimentation, and flotation with a solution of red mercuric iodide and potassium iodide. It was the only concentration technique that revealed *Schistosoma bovis* infection, apart from that of Quesada & Papandrea which was not reliable. M.MCK.

492—Australian and New Zealand Journal of Surgery.

a. REAY, E. R. & ROLLESTON, G. L., 1953.—"Hydatid cyst of the kidney. A report of two cases." **22** (4), 268–272.

493—Australian Veterinary Journal.

a. GORDON, H. McL., 1953.—"The epidemiology of helminthosis in sheep in winter-rainfall regions of Australia. I. Preliminary observations." **29** (12), 337–348.
b. FORSYTH, B. A., 1953.—"Epidemiology studies on helminthosis of sheep in southern N.S.W." **29** (12), 349–356.
c. PULLAR, E. M., 1953.—"The epidemiology of helminthosis in sheep in winter-rainfall regions of Australia." **29** (12), 357–362. [Discussion pp. 362–364.]

(493a) The results of numerous field trials carried out in Tasmania, South Australia and Western Australia are presented. Bioclimatographs, based on mean monthly maximum temperatures and mean monthly rainfall, for representative regions in the States concerned are used to explain geographical and seasonal distribution of the nematodes encountered in the trials. An attempt is made to define the optimum climatic conditions for these parasites. In the winter rainfall regions of southern Australia worm burdens of lambs born in autumn

or spring tend to increase in late winter to early spring, and heavy infestations may occur before weaning. In Tasmania spring lambs may be heavily infested before midsummer and there may be further increases in worm burden in late summer and autumn. Sometimes heavy infestations were seen in late winter when the sheep were almost twelve months old. When unusual early summer rains occurred in Western Australia worm burdens increased rapidly and heavy infestations were recorded in late summer and autumn. In South Australia there was evidence that low rainfall in the winter was associated with light infestations with trichostrongyles which were insufficient to stimulate development of resistance and, in consequence, heavier worm burdens developed in the following summer. *Ostertagia* spp. and *Trichostrongylus* spp. tended to have similar seasonal trends with *Ostertagia* spp. increasing a little earlier. *Chabertia ovina* follows a similar pattern but may lag some weeks behind the trichostrongyles. *Haemonchus contortus* has a patchy distribution in the winter rainfall regions, but where it is present it is subject to the climatic influences recorded in the summer rainfall regions [see also Helm. Abs., **17,** No. 11a]. Where mean maximum winter and early spring temperatures reach 65°F., as in parts of Western Australia, increasing infestations were seen. Relationships between rainfall and changes in worm burden do not appear to be as clear in winter rainfall regions as in summer rainfall regions. It is possible that the dominance of *H. contortus* in the summer rainfall regions has some influence on the population of *Trichostrongylus* spp. by cross-immunity reactions. The interaction of immunological phenomena, particularly the influence of early trichostrongylosis and nutritional conditions probably play a very important part in determining seasonal changes in worm burden in the winter rainfall regions. The prolonged prepatent period in the life-cycle of *Ostertagia* spp. in consequence of the histotropic phase may complicate the epidemiological relationships. The preliminary results have been used to decide the times for preventive use of anthelmintics. Rapidly increasing worm burdens in late winter and early spring indicate the need for treatment of lambs in late spring or early summer and for the treatment of ewes before lambing. In Tasmania increasing worm burdens in early autumn indicate the need for treatment in late summer. In the wetter regions where *C. ovina* is present in large numbers a midwinter treatment is indicated. In Western Australia increasing worm burdens after an unusual summer rain indicate the need for tactical treatment some three weeks later. H.MCL.G.

(493b) In southern New South Wales infestations with *Ostertagia* spp. and *Trichostrongylus* spp. increased in spring, reached a peak in summer and declined in autumn. Lambs born in the autumn experienced infestations during their first winter when nutritional conditions were good and were not as susceptible to infestation as lambs born in the spring. Heavy infestations were associated with malnutrition and clinical trichostrongylosis was seen in the summer. The duration of heavy infestations was dependent on the time of the autumn rains which brought improved nutritional conditions. Infestations acquired in spring and summer appeared to confer resistance to infestation during the following winter. *Chabertia ovina* and *Oesophagostomum venulosum* infestations reached peaks in late summer and declined in autumn. H.MCL.G.

(493c) Observations in Victoria indicate that the suggested standards for testing the suitability of local climate for the spread of *Haemonchus contortus* and *Trichostrongylus* spp. are not readily applicable in that state. The rainfall requirements appear to be set too high and it is probable that the lower evaporation rate and possibly a different type of pasture (containing a higher proportion of plants with broad horizontal leaves which help to conserve soil surface moisture) may allow maximum development of the free-living stages with less actual precipitation. *Trichostrongylus* spp. and *Ostertagia* spp. infestations showed a diphasic seasonal incidence with rises in late summer to autumn and late winter to early spring. Outbreaks of haemonchiasis showed a typical summer incidence. The seasonal incidence of 362 consecutive cases of verminous gastro-enteritis was used to obtain the data in this paper. A map of Victoria with superimposed bioclimatographs and histograms is used to show the relationships between climatic conditions and the incidence of outbreaks. H.MCL.G.

494—Biológico. São Paulo.

a. CARVALHO, J. C. DE, LORDELLO, L. G. E. & BOOCK, O. J., 1953.—" Considerações acêrca do nematóide dourado da batatinha." **19** (11), 196–200.

(494a) Carvalho *et al.* describe briefly the distribution and life-history of the potato-root eelworm (*Heterodera rostochiensis*) and, in general terms, the method of extracting cysts from soil. They also mention that *Ditylenchus destructor* may be found in potato tubers and describe how nematodes may be fixed and mounted for microscopic examination. M.T.F.

495—Boletín Epidemiológico. Mexico.

a. RUIZ REYES, F. & GONZÁLEZ PAREDES, I., 1953.—" Nuevas adquisiciones epidemiológicas sobre oncocercosis en el Estado de Oaxaca." **17** (3), 77–80, 81–82.

b. RUIZ REYES, F., 1953.—" Lucha antisimúlido en la campaña contra la oncocercosis. (Nota preliminar.)" **17** (3), 80.

(495a) The State of Oaxaca, which with the adjacent State of Chiapas comprises the onchocerciasis region of Mexico, has two main foci of infection, one in the north-east and one in the south-east. The geographical and agricultural details of these foci are described and a new centre, which is probably about five years old, is reported adjacent to the north-east focus in the district of Cuicatlán. Here 94 cases, all seemingly autochthonous, were diagnosed. At the time of writing they were receiving treatment with diethylcarbamazine and the nodules were being removed. In the south-eastern focus it is planned to examine the whole population for onchocerciasis and to restrict the movements of harvest workers into this zone in the coffee season; a service has already been established to treat infected cases. *Simulium* species from the three foci of Oaxaca and from the Zongologica region in the State of Veracruz are tabulated together with the place of capture. M.MCK.

(495b) The most important simuliid concerned with onchocerciasis in Mexico is *Simulium ochraceum*. Other suspected species are *S. callidum*, *S. metallicum*, *S. hematopotum*, *S. veracruzanum* and *S. exiguum*. Their larval control is difficult but D.D.T. and gammexane have been applied along currents at 2 p.p.m. every 200 m. to 300 m. with encouraging results. The first applications of D.D.T. have been made as part of a plan of control in the basin of the Despoblado, State of Chiapas. Other insecticides will be tested. M.MCK.

496—Boletín de Informaciones Parasitarias Chilenas.

a. TAGLE V., I., 1953.—" Aspectos parasitológicos del ganado en el sur de Chile." **8** (4) 83–84.

(496a) *Dictyocaulus viviparus*, *Oesophagostomum radiatum*, *Ostertagia ostertagi*, *Nematodirus filicollis* and *N. spathiger* are common among live-stock in the vicinity of Los Lagos in southern Chile. P.M.B.

497—Bollettino della Società Italiana di Biologia Sperimentale.

a. CARTA, A., 1953.—" Dermatite papulare da cercarie di *Schistosoma bovis* nell'uomo." **29** (12), 1936–1938.

b. DEIANA, S., 1953.—" L'infestione del *Bulinus contortus* da cercarie di *Schistosoma bovis* (Sonsino, 1876) e del *Paramphistomum cervi* (Schrank, 1790) in diverse stagioni dell'anno." **29** (12), 1939–1940.

(497a) [This is a shorter version of a paper which appears in *Ricerca Scientifica*, 1954, **24**, 569–574. For abstract see Helm. Abs., **23**, No. 502a.]

(497b) In the north-east of Sardinia where *Bulinus contortus* is the vector of *Schistosoma bovis* and *Paramphistomum cervi*, the cercarial incidence of both species increases to a peak in August when about 36% are infected with *S. bovis* and about 26% with *P. cervi*. By October the incidence falls to 2% and 6% respectively. M.MCK.

498—Brasil-Médico.

a. PESSÔA, S. B., 1953.—" Sôbre dois antimoniais penta-valentes no tratamento da esquistossomose mansônica (Glucantime e Solustibosan)." **67** (12/13), 211–215. [English summary p. 215.]

b. BARRETO, A. M., 1953.—" Esquistosomose aguda—abdome agudo—obstrução intestinal por granuloma esquistosomótico." **67** (23/24), 420–422.

(498a) The pentavalent antimony compounds glucantime and solustibosan were tested against *Schistosoma mansoni*. The former was injected intramuscularly in ten cases in three to seven injections to a total dose of 4·5 gm. to 27 gm., and intravenously to five cases in five or seven injections, to a total of 24 gm. to 28·5 gm.; one in each group became negative. Intramuscular injections were painful, causing in some cases inflammation and fever. Solustibosan was administered in solution in four to six intramuscular injections with total doses of 24 c.c. to 95 c.c. to ten patients: two became negative. An increase in the blood sedimentation rate was observed with both drugs and was probably an indication of toxicity to the liver.

M.MCK.

499—British Journal of Dermatology.

a. CROW, K. D. & SEVILLE, R. H., 1953.—" Onchocerciasis." **65** (7/8), 281–282. [Discussion pp. 282–283.]

(499a) Irritating flesh-coloured papules about one eighth of an inch in diameter appeared on the back, and later on the outsides of the buttocks, of an agricultural research worker employed in the interior of the Gold Coast for two years. No subcutaneous nodules could be palpated. No embryos were present in skin shavings. There was an eosinophilia of 45%. Filarial skin test was positive but no microfilariae were seen. In the week following treatment with banocide there was considerable allergic reaction of the Herxheimer type. All the skin lesions had disappeared after treatment for five weeks. R.T.L.

500—British Journal of Surgery.

a. REDDY, D. G. & RAMAMURTHY, B., 1953.—" Ventriculographic changes in cysticercosis of the brain." **41** (165), 11–12.

501—Bulletin de l'Académie Nationale de Médecine. Paris.

a. HUARD, P., 1953.—" La chylurie à Hanoï." 3e Série, **137** (28/29), 486–492.

b. DESCHIENS, R., 1953.—" Réponse des hyperéosinophilies à la cortisone en fonction de leur étiologie." 3e Série, **137** (30/31), 504–506.

c. SABADINI, L. & MARILL, F. G., 1953.—" La bilharziose urinaire en Algérie." 3e Série, **137** (30/31), 521–524.

(501a) Huard describes from 102 cases in North Vietnam the syndrome and treatments of chyluria, which is nearly always of filarial origin. [Details of 63 of these cases have already been published.] Trivalent and pentavalent arsenic compounds and antimony compounds were not particularly successful against the parasites, but the piperazine derivative 3799 RP, or notezine, was effective in cases in which the infection was newly acquired although not in chronic cases. M.MCK.

(501b) Deschiens has studied further the effect of cortisone and ACTH on nine cases of tropical eosinophilia and 13 cases of helminthic eosinophilia. Cortisone was given in doses of 50–100 mg. per 60 kg. body-weight, intramuscularly every two days for 7–15 days and, when given for a sufficient period, did discriminate between tropical and helminthic eosinophilia. Cortisone did not reduce the eosinophilia produced in three guinea-pigs by *Fasciola hepatica* extract, in three cats with *Toxocara felis* infection and in one of two cats with *Dipylidium caninum*. In the second cat with *D. caninum* the eosinophilia was reduced by 40%. Eosinophilia produced by "le piment de Guinée" in guinea-pigs was reducible. S.W.

(501c) Following the sudden appearance of schistosomiasis haematobia in two villages n west Algeria in 1939 its incidence and the possible sources of infection were investigated. During the early years of the war a number of Tunisian, Moroccan and especially Senegalese roops were found to be infected although frequently symptomless; these and other infected ersons were treated. In spite of this a new focus has recently appeared at Fondouk, 35 km. rom Algiers and 120 new cases have been reported in 18 months. As *Bulinus contortus* is videspread in irrigation canals and reservoirs and is present in large numbers, prompt action s needed to prevent the spread of the disease. S.W.

502—Bulletin de l'Académie Vétérinaire de France.

a. GUILHON, J. & LUCAM, F., 1953.—" Cénurose et tremblante du mouton." **26**, 327–329.
b. GUILHON, J. & GRABER, M., 1953.—" Une nouvelle filaire du chien en France." **26**, 467–469.

(502a) The difficulty of distinguishing between the symptoms of coenuriasis and crapie in sheep (i) in the early stages of the two diseases, (ii) in atypical cases of scrapie in vhich the characteristic pruritus is almost or completely absent and (iii) in cases of coen-riasis in which "turning" is absent, is illustrated by notes on a number of cases in the epartment of Loiret and at Lyons. P.M.B.

(502b) Guilhon & Graber record finding six females and three males of *Dirofilaria epens* in the subcutaneous connective tissue of a dog examined post mortem at Alfort. This s the first record of this parasite in France. S.W.

503—Bulletin of the Calcutta School of Tropical Medicine.

a. BHADURI, N. V. & CHOWDHURY, A. B., 1953.—" Methyl glucamine antimoniate in filariasis." **1** (2), 20–21.

(503a) Bhaduri & Chowdhury have tested methyl glucamine antimoniate (available s a 30% solution and containing 28·35% of pentavalent antimony) in fourteen cases of filariasis. ll were suffering from recurrent attacks of lymphangitis and fever and eight had micro-lariae of *Wuchereria bancrofti* in the blood; two were also infected with *W. malayi*. Intra-nuscular injections of up to 10 c.c. were given daily to a total dosage of from 50 c.c. to 215 c.c. lthough the microfilariae disappeared from the blood in four cases and were significantly educed in three, there was no improvement in the elephantoid conditions. Only two had ecurrences of lymphangitis and fever after one and two years. There were no side effects. S.W.

504—Bulletin Horticole. Liége.

a. HABRAN, R. & LACROIX, E., 1953.—" Essais de lutte contre l'anguillule du chrysanthème." 71e Année, 8 (7), 207–210; (10), 287–291.

(504a) Of a number of chemical treatments used in several tests for control of leaf elworm [*Aphelenchoides ritzema-bosi*] in chrysanthemums the best was E605 forte used as powder or liquid with or without Derricuivre. At least four treatments were given at inter-ils of about three weeks. Experiments with and without D-D treatment of the soil showed at its use was not justified on grounds of expense. Other promising substances, not yet lly tested, are Pestox, Systox, Pirox and Fosfern 2·0. M.T.F.

505—Bulletin of the Kyushu Agricultural Experiment Station.

a. NISHIZAWA, T., 1953.—[Studies on the varietal resistance of rice plant to the rice nematode disease "senchu shingare byo" (VI).] **1** (3), 339–349. [In Japanese: English summary p. 349.]

(505a) Nishizawa gives the result of three years' field tests of 48 varieties of rice for resistance to the white tip disease caused by nematodes [presumably *Aphelenchoides besseyi*]. Nine varieties were symptomless, six were resistant, 24 moderately susceptible and nine highly susceptible. Resistance appears to be inherited and is carried by the variety Asa-Hi. The appearance of symptoms was more variable in susceptible than in resistant varieties. M.T.F.

506—Bulletin Médical de l'Afrique-Occidentale Française.

a. PAYET, M., BERTE, M., CAMAIN, R., PENE, P. & PLAN, C., 1953.—" Coeur pulmonaire aigu bilharzien, à propos de deux observations." **10**, 83–88.
b. BERTE, M., 1953.—" Les manifestations cutanéo-muqueuses des helminthiases intestinales." **10**, 199–214.
c. PELLEGRINO, A., CHARMOT, G., PARIS, P. & GIUDICELLI, P., 1953.—" L'intérêt de l'urographie intraveineuse dans la bilharziose urinaire." **10**, 261–266.
d. RAOULT, A., MICHEL, L. & DIOUF, J., 1953.—" Essai d'un nouvel antibilharzien l'AB 5." **10**, 267–302.
e. SOHIER, H. M. L., CAMAIN, R. & FUSTEC, H., 1953.—" A propos d'une perforation intestinale par ascaris." **10**, 305–307.

(506a) Payet *et al.* describe two fatal cases of cor pulmonale caused by *Schistosoma haematobium* infection. S.W.

(506b) Berte discusses the various changes which infection with intestinal helminths (especially Ascaris and Ancylostoma) may produce in the skin and mucous membranes. Some types of skin eruption (prurigo etc.) are caused by autotoxins and others (vesicular and bullous manifestations) by allergic reactions. The not uncommon neurodermatitis is another example of the affinity which helminth toxins appear to have for nervous tissue. Affections of the mucous membranes included various types of angina, stomatitis, glossitis etc. The paper concludes with observations on 41 cases which illustrate the changes discussed. S.W.

(506c) Pellegrino *et al.* examined 23 cases of schistosomiasis haematobia by X-ray, intravenous pyelography and cystoscopy. The degree of damage observed by the two first-mentioned methods was directly proportional to the intensity and duration of the infection. X-ray examinations can show bladder and ureter changes caused by schistosome infection when diagnosis cannot be made by cystoscopy or urine examination and intravenous pyelography reveals the relative frequency of renal changes. S.W.

(506d) Raoult *et al.* report on tests of a new anthelmintic, AB 5 (stated to be "1 ascorbo-hypophosphito-antimonio tartrate de calcium et de potassium") on 14 cases of *Schistosoma haematobium* and one case of *S. mansoni* infection. The drug is given intravenously and orally, the amount in the injections increasing from 1 mg. per kg. body-weight on the first day to 2·5 mg. per kg. on the fifth and last day of treatment; in addition five tablets are given at regular intervals during each day of treatment [the amount of the drug contained in a tablet is not stated]. Although not toxic, unpleasant side effects occurred and in some cases the patients did not complete the treatment. Good results were obtained in those that did. S.W.

507—Bulletin. New Zealand Department of Agriculture.

a. JACKS, H., 1953.—" Disinfection of nursery soil." No. 363, 12 pp.

(507a) Jacks briefly gives details for the disinfection of nursery soil by low or high-pressure steam, electrically applied heat, drenching with formalin, copper oxychloride, or "Phygon" solutions, or fumigation with chloropicrin, D-D mixture, or a 1:1 or 1:2 combination of the two. Heat sterilizers and a hand injector are illustrated. In addition to eelworms, D-D satisfactorily controls damping-off and root-rotting fungi, but wilt fungi require chloropicrin. B.G.P.

508—Bulletin de l'Office International des Épizooties.

a. NEVENIĆ, V., 1953.—" L'échinococcose en Yougoslavie." **40,** 33–44. [English summary pp. 43–44.]
b. JORÉ D'ARCES, P., 1953.—" L'échinococcose en Algérie." **40,** 45–51. [English summary pp. 50–51.]
c. ANON., 1953.—" Recommendations and resolutions at the XXIst session of the International Office of Epizootics (4th to 9th May 1953). I. Echinococcosis." **40,** 737. [Also in French p. 732.]

(508a) In some villages in Yugoslavia, about 4% of the inhabitants have hydatid. This disease is equally important in domesticated animals. In Dalmatia, hydatid occurs in 78% of the cattle, 70% of the pigs, 63% of the sheep and 62% of the goats. In Macedonia the infection reaches 90% in the cattle and 72% in the sheep. In Serbia the incidence of hydatid varies from area to area, ranging from 58·5% to 95·4% in cattle, 35% to 70% in sheep and 16·2% to 30·5% in pigs. In Bosnia it has been diagnosed in 12% of the cattle, 15% of the sheep and 8% of the pigs. *Echinococcus granulosus* infection of dogs in Yugoslavia ranges from 24·1% to 35·5% in Macedonia, 20% to 22% in Montenegro, 8% to 12% in Serbia and 16% in Bosnia. At Zagreb it occurs in 6% only. R.T.L.

(508b) No statistics of the incidence of hydatid in man in Algeria have been published since 1937. Between 1916 and 1925, there were 326 cases in the three hospitals at Algiers, Oran and Constantine. Cattle are more heavily infected than sheep. Nearly all the herds are pastured on fields infected with faeces of stray dogs, most of which are carriers of *Echinococcus granulosus*. Control in Algeria is difficult owing to the lack of supervised slaughterhouses, the practice of slaughtering in the open, the number of ownerless dogs and the presence of jackals. R.T.L.

(508c) The 21st session of the International Office of Epizootics recommends to the governments of countries in which hydatidosis exists that the public should be informed of the dangers of the disease and that appropriate control measures should be introduced. R.T.L.

509—Bulletin. Puerto Rico Agricultural Experiment Station, Río Piedras.

a. RIVERA-ANAYA, J. D., CIORDIA, H. & MARTÍNEZ DE JESÚS, J., 1953.—" Comparative efficiency of intradermal and precipitin techniques in the diagnosis of fascioliasis of cattle in Puerto Rico." No. 115, 20 pp.

(509a) Several methods for the diagnosis of liver-fluke infection were tested on 219 cattle from Puerto Rico and neighbouring islands. In 89·5% the results of faecal examination for eggs agreed with the results of examination of the liver for flukes. The precipitin test was effective in 55·9% of 195 animals, the intradermal test in 94·98% as compared with the faecal and/or liver findings and took only a fraction of the time required for microscopical examination for eggs. The antigen used was prepared by suspending one part of dry powdered fluke in 100 parts of physiological saline. After standing overnight with frequent shaking it was centrifuged and the supernatant fluid was, for the precipitin test, diluted 1:500 to 1:32,000 and mixed with an equal volume of serum. For the intradermal test the dilution used was 1:500 and the result was considered positive when the wheal was at least 18 mm. × 15 mm. in size 30 minutes after injection. M.MCK.

510—Bulletin des Séances. Institut Royal Colonial Belge.

a. GILLET, J., 1953.—" Les schistosomiases humaines au Congo belge et au Ruanda-Urundi." **24** (4), 1323–1334.
b. SCHWETZ, J., 1953.—" Sur la bilharziose vesicale à Kongolo." **24** (4), 1411–1444.
c. SCHWETZ, J., 1953.—" Sur quelques rongeurs sauvages et une musaraigne du Congo, hôtes naturels de deux schistosomes." **24** (4), 1453–1463.

(510a) Gillet reviews the distribution of schistosomiasis in man in the Belgian Congo and Ruanda-Urundi. *Schistosoma mansoni* is endemic in four main regions: around Lake Albert, the Kibali-Ituri district, Uele and Banzyville in the north and north-east, around

Lakes Edward, Kivu and Tanganyika in the east, around Katanga and the Kasai river in the south-east and south, and around Kimpese and Buku-Bandu in the west. With the exception of Usumbura and the surrounding plain, Ruanda-Urundi is free from *S. mansoni*. *S. haematobium* has been introduced into the Belgian Congo and there are two main foci, one around Katanga and Mateba and the other in the Kibunzi and Banza-Sanda regions. The Katanga focus is slowly spreading northwards along the Lualaba valley towards Stanleyville. *S. intercalatum* appears to be peculiar to the Belgian Congo and is limited at present to the valley of the Congo-Lualaba river from Jalikina to Kindu. The paper concludes with short sections on diagnosis, treatment and control measures. S.W.

(510b) In this survey of the incidence of schistosomiasis haematobia in the Kongolo area, Schwetz examined a total of 811 persons of whom 542 were infected. The infection which had disappeared in 1939 reappeared in 1944. Most of those examined were from about seven to ten or twelve years old. The percentage incidence at the five centres was: Catholic mission schools 36·2%, railway camp 58%, Kinkotonkoto and Cotonco 67·3%, Kangoie 80·7% and Misalwe village 90%. The reasons for the differences in incidence are discussed. Only a few of the *Physopsis* collected emitted *Schistosoma haematobium* cercariae. Treatment of 18 cases with miracil gave good results. Prophylactic measures are outlined and Schwetz is of the opinion that only by the examination and treatment of all infected persons, including those without symptoms, can control be achieved. S.W.

(510c) Schwetz lists and annotates one shrew and a number of wild rats and mice collected in the Belgian Congo and examined for schistosome infection. None of the eight species collected around Jadotville was infected. At Sakania the two aquatic species *Dasymys bentleyae* and *Pelomys fallax*, and the only *Lophuromys aquila* captured were infected with *Schistosoma rodhaini*. At Albertville, *D. bentleyae* and *P. fallax* were infected with *S. rodhaini* and with *S. mansoni* var. *rodentorum*. A very small proportion of the *Mastomys coucha* collected was also found to be infected. In an appendix Schwetz compares the species he collected with those caught by Stijns around Elisabethville. S.W.

511—Bulletin de la Société de Pathologie Exotique.

a. DESCHIENS, R., POIRIER, M. & LAMY, L., 1953.—" Les altérations anatomo-pathologiques de la surrénale dans l'éosinophilie expérimentale du cobaye." **46** (6), 954–955.
b. DESCHIENS, R., LAMY, L. & LAMY, H., 1953.—" Sur un ostracode prédateur de bullins et de planorbes." **46** (6), 956–958.
c. DESCHIENS, R., CECCALDI, J., LAMY, L. & RAVISSE, M., 1953.—" Sur un nouveau cas africain de sparganose humaine." **46** (6), 958–961.
d. LAPEYSSONNIE, L., MASSON, J. & MOIGNOUX, J. B., 1953.—" Dermatose papulo-nodulaire hyperkératosique d'origine filarienne." **46** (6), 961–966. [Discussion p. 966.]
e. BOITHIAS, R. & BRUMPT, V., 1953.—"Note sur le diagnostic parasitologique de l'onchocercose oculaire en clinique et au laboratoire." **46** (6), 967–971.
f. BRUMPT, L. C. & SANG, H. T., 1953.—" Le traitement des ankylostomoses graves par le tétrachloréthylène." **46** (6), 1024–1037.
g. FRIESS, J., PIERROU, M. & SEGALEN, J., 1953.—" De certaines formes cliniques de la filariose lymphatique (*W. malayi*); relations avec les éosinophilies tropicales." **46** (6), 1037–1063. [Discussion pp. 1063–1066.]

(511b) Deschiens *et al.* describe the almost complete destruction of laboratory colonies of *Bulinus contortus* and *Planorbis glabratus* by an ostracod, *Cypridopsis hartwigi*. Further observations are being made to determine if *C. hartwigi* is a natural predator on molluscs and if it could be used as a means of biological control of schistosome intermediaries. S.W.

(511c) Deschiens *et al.* report a case of sparganosis, the fifth to be observed in Africa. They describe the gross anatomy of the spargana and microscopical appearance of transverse sections. Although specific identification was impossible the authors conclude that it belonged to the genus *Diphyllobothrium*. S.W.

(511d) Lapeyssonnie *et al.* describe a case of papular nodular hyperkeratosis of the skin in which all parts of the body except the face, hands and feet were affected. The appearance was very similar to that described in 1922 by Montpellier & Lacroix as "gale filarienne" and microfilariae (probably Onchocerca) were found in the early lesions and healthy skin but it differed in that microfilariae did not disappear from the old lesions. There was little or no pruritus and no vesicle formation but there was a persistent hyperpigmentation around old lesions. All of a total of 39 cases observed were in men, mostly young and associated with horses. The onset of symptoms coincided with the rainy season and the appearance of *Culicoides*. S.W.

(511e) Boithias & Brumpt conclude, from a study of 373 cases, that skin biopsy is more satisfactory in the diagnosis of onchocerciasis than the classical skin scrape technique. It also has the advantage that staining is unnecessary. They point out, however, that skin biopsy was negative in a number of cases which were positive to skin scrapes, biomicroscopy or cyst puncture. S.W.

(511f) From a study of 59 serious cases of ancylostomiasis the authors confirm that tetrachlorethylene is the remedy of choice. It is well tolerated at doses of 3 c.c. to 6 c.c. which are well within the safety margin. It is 50% effective at a single dose of 3 c.c. and 85% effective at a single dose of 6 c.c. Purgation is best carried out several hours after dosing but is not essential and may be omitted when patients are very weak. There are very few contra-indications and the drug is also effective against Ascaris, Enterobius, Necator and Trichuris. S.W.

(511g) In soldiers repatriated from Indo-China Friess *et al.* have observed 60 cases of a syndrome of adenopathy, eosinophilia and asthmatic bronchitis. Five of the most typical are described in detail. Although filariasis was suspected they were unable to demonstrate microfilariae in the blood and tests with a filarial antigen were negative. However, in one case which the authors were not able to follow up, one microfilaria was found by biopsy of the lymph gland and in a further eight cases living microfilariae were found in the serum in which glands had been placed after removal; these were later identified as microfilariae of *Wuchereria malayi*. Excellent results were obtained from treatment with hetrazan, two courses normally being necessary. Neither signs of intolerance nor allergic symptoms were observed and the authors consider it to be the remedy of choice although good results were also obtained with Novarsenobenzol. In the discussion Galliard draws attention to the dangers of provoking elephantiasis by removal of the lymph glands and advocates some other method of diagnosis. S.W.

512—Bulletin de la Société Vétérinaire Hellénique.

a. CARDASSIS, J., 1953.—[Trichinelliasis.] Ser. B, No. 10, pp. 347–367. [In Greek: French summary p. 367.]

513—Bulletin of the World Health Organization.

a. CHOW, C. Y., 1953.—"*Pistia* clearance with herbicides in rural-filariasis control. A preliminary note." **9** (4), 571–573. [French summary p. 573.]
b. IYENGAR, M. O. T., 1953.—"Filariasis in Thailand." **9** (6), 731–766. [French summary pp. 765–766.]

(513a) In Ceylon, clearance of *Pistia* is a recognized means of controlling rural filariasis. Excellent results were obtained in a large scale field experiment using herbicides. An acre of water covered with *Pistia* was sprayed with an imperial gallon (4·2 litres) of water containing two fluid ounces (56 ml.) of phenoxylene and one fluid ounce (28 ml.) of the wetting agent "Teepol". The cost per acre was Rs. 20, about one sixth of that of manual removal. R.T.L.

(513b) In a study of filarial infection in the eastern coastal belt of Thailand, where the infection is endemic, 4,112 people were examined and 862 (21%) showed microfilariae of

Wuchereria malayi in the blood. A single instance of *W. bancrofti* was probably acquired in Hainan. Filarial disease which was observed in 215 cases manifested itself as elephantiasis of the leg, often associated with arm involvement, in 213. In only nine of these were microfilariae found. An increase in population density appeared to lower the degree of filarial endemicity. Forty mosquito species from human dwellings, totalling 2,499 mosquitoes, were examined and *Mansonia annulifera*, *M. uniformis*, *M. indiana*, *M. longipalpis*, *Anopheles hyrcanus*, *A. barbirostris*, *A. albotaeniatus* and *A. umbrosus* were found to be vectors and carried in all cases *W. malayi*. The inside walls of the houses in one village were sprayed with D.D.T. at the rate of about 170 mg. per sq. ft. and 21 days later 1·3 vectors were caught per man-hour as compared with 44·8 before the application. Regular spraying twice yearly is recommended, in June to July and December to January, at the rate of 200 mg. per sq. ft. This would also help to reduce malaria vectors and could be undertaken by the malaria control unit already in Thailand. Chemoprophylaxis with piperazine drugs or measures against larval mosquitoes would be uneconomical. Hetrazan treatment had been carried out in some villages by the government and the effect was investigated six to ten months later by the author. He found no significant differences compared with untreated villages. Attention is drawn to the importance of controlling *Culex fatigans* in cities in Thailand where it is very common and could spread imported infections of *W. bancrofti*. Finally, the cases of elephantiasis recorded in southern Thailand in 1949–50 are tabulated with analyses according to districts. M.MCK.

514—California Agriculture.

a. RASKI, D. J. & HART, W. H., 1953.—" The clover root nematode. New pest discovered in Camarillo district is apparently destructive to clover and may become important pest." **7** (9), 14.

(514a) [A fuller account of this paper appears in *Plant Dis. Reptr*, **37**, 197–200. For abstract see Helm. Abs., **22**, No. 247g.]

515—Canadian Journal of Public Health.

a. POOLE, J. B., 1953.—" The incidence of human trichinosis in Canada." **44** (8), 295–298.

(515a) Poole reviews some of the literature on trichinosis in North America and reports the finding of Trichinella in 6 out of 82 human diaphragms from the Ottawa area, and in 11 out of 169 from the Kamloops area of British Columbia. M.MCK.

516—Ceylon Veterinary Journal.

a. SHOHO, C., 1953.—" Cerebro-spinal nematodiasis and its related problems." **1** (1), 17–22.
b. PERUMAL PILLAI, C. & PERERA, S. J. E., 1953.—" Epizootic cerebro-spinal nematodiasis in goats. Control of the disease by 1-diethylcarbamyl-4-methylpiperazine citrate: preliminary therapeutic trial." **1** (1), 22–26.
c. McGAUGHEY, C. A., 1953.—" Actinomycotic-like granulomata of the vertebral column in dogs infected with *Spirocerca lupi*." **1** (1), 34–36.
d. SARWAR, S. M. & SARWAR, M. M., 1953.—" Studies of *Coenurus gaigeri* in goats in India." **1** (2), 89–91.

(516a) Shoho is of the opinion that cerebrospinal nematodiasis may have a global distribution and may occur wherever three conditions prevail, viz., (i) the transmitting mosquito is present, (ii) *Setaria digitata* occurs in the abdominal cavity of cattle and (iii) abnormal hosts (horses, sheep and goats) are kept in close contact with cattle. If *S. digitata* and *S. labiatopapillosa* are identical, cerebrospinal nematodiasis may occur in European countries and elsewhere. R.T.L.

(516b) The successful treatment by caricide (1-diethylcarbamyl-4-methylpiperazine citrate) of nine cases of cerebrospinal nematodiasis in goats in Ceylon is reported. The response was dramatic in the very early cases. The dosage used was 40 mg. per kg. body-weight repeated for three consecutive days in five of the cases, and for two consecutive days in four cases. R.T.L.

(516c) Actinomycotic-like granulomata of the vertebral column and spinal cord associated with *Spirocerca lupi* tumours in the oesophagus are reported in two locally bred dogs in Ceylon. The granulation tissue caused by the worms was probably the point of entry of the mycotic infection which then spread through the adjacent vertebrae. R.T.L.

(516d) *Coenurus gaigeri* is reported for the first time from the United Provinces, Rajputana, the Central Provinces and the Madras Presidency, where it occurs as an uncommon parasite of goats. When fed experimentally to puppies, the adults when five weeks old were only 2 cm. to 3 cm. in length. The size of the cysts varied with their location. Out of 39 cysts found, only three contained a few free-floating scolices. This species appears to be more prolific than *C. cerebralis*. G.I.P.

517—Ciencia. Mexico.

a. FLORES-BARROETA, L., 1953.—" Céstodos de vertebrados. I." **13** (1/3), 31–36. [English summary p. 36.]

b. WINTER, H. A., 1953.—" Presencia de *Spirocamallanus spiralis* (Baylis, 1923) Olsen, 1952 (Nematoda) en peces marinos de aguas mexicanas." **13** (7/8), 137–140. [English summary p. 139.]

(517a) Flores-Barroeta describes *Haploparaxis* [*Aploparaksis*] *caballeroi* n.sp. from *Larus franklini* in Panama. It is characterized by the shape and size of the rostellar hooks and differs from *H. veitchi* in that the cirrus sac extends only across the lateral third of the proglottis, not almost to the mid-line. The proglottides of *Ophiotaenia perspicua* from *Leptodira rhombifera* in Panama and the adult of *Bothriocephalus manubriformis* from *Istiophorus grayi* in the Mexican Pacific are redescribed. Although known to be common, the larva of *Ligula intestinalis* is recorded for the first time in Mexico from a *Chirostoma* sp. and a *Chirostoma estor* subsp. The adult, which is rare, has not been recorded there. M.MCK.

(517b) Females of *Spirocamallanus spiralis* from the gut of *Micropogon ectenes* (Sciaenidae) and *Achirus* sp. (Soleidae) of Mexican waters are recorded and redescribed. These marine fish belong to families hitherto unkown to carry the parasite. M.MCK.

518—Circular. Clemson Agricultural College, South Carolina.

a. NETTLES, W. C., LEWIS, J. M. & SCHILLETTER, A. E., 1953.—" Control of root knot and other nematodes." No. 382, 16 pp.

519—Clinica Veterinaria. Milan.

a. CASAROSA, L., 1953.—" Lesioni a carattere generalizzato in giovani bovini (vitelli e vitelloni) inquadrabili nel gruppo delle cosiddette 'macchie verdi dei vitelli'." **76** (3), 66–81; (4), 97–111; (5), 129–136. [English & French summaries p. 135.]

(519a) Casarosa discusses, in a paper illustrated with numerous photomicrographs, the aetiology and pathogenesis of the green spots present in the kidneys, liver, lungs, lymphatic glands and spleen of 16 calves which were apparently caused by ascaris larvae. The lesions in the kidneys may be mistaken for tubercular lesions during meat inspection. R.T.L.

520—Comptes Rendus des Séances de l'Académie des Sciences. Paris.

a. TIMON-DAVID, J., 1953.—" Sur une métacercaire de la sardine et ses affinités avec le groupe Rhodometopa." **237** (19), 1182–1184.

(520a) Sardines caught near the coast of Provence frequently contained metacercariae in which the morphological characters, particularly those of the excretory system, were identical with those of the cercariae of the rhodometopa group. These cercariae are most nearly related to *Cercaria rhodometopa* Perez. R.T.L.

521—Comptes Rendus des Séances Mensuelles. Société des Sciences Naturelles du Maroc.

a. GAUD, J., 1953.—" A propos de la filariose humaine du Maroc." **19** (5), 69.

(521a) Gaud records two further cases of human infection with *Gongylonema pulchrum* in Morocco. S.W.

522—Comptes Rendus des Séances de la Société de Biologie. Paris.

a. DESCHIENS, R. & POIRIER, M., 1953.—" Etude comparée des propriétés toxiques et éosinophilogènes de différents extraits de douves chez le cobaye." **147** (11/12), 1059–1061.
b. SCHWETZ, J., 1953.—" Sur les variations individuelles dans les oeufs des schistosomes." **147** (23/24), 2051–2053.

(522a) Deschiens & Poirier tested three extracts of *Fasciola hepatica* for toxicity and the ability to produce eosinophilia in guinea-pigs. They describe in detail the lesions found post mortem. The extracts were: (i) aqueous, (ii) trichloracetic acid and (iii) a complex glucide-lipid-polypeptide extract. The lesions provoked by all three were similar but were more intense with (ii) and (iii). The eosinophilia was more marked with (i) and (iii). S.W.

(522b) Five photomicrographs illustrate individual variations in the shape of *Schistosoma haematobium* eggs. There are oval, elongate and intermediate forms, the elongate eggs resembling those of *S. intercalatum*. M.MCK.

523—Current Science. Bangalore.

a. SANJEEVA RAJ, P. J., 1953.—" First record of an ichthyobdellan leech *Branchellion* Savigny from the Indian waters." [Correspondence.] **22** (10), 310.

524—Deutsche Landwirtshaft.

a. NOLTE, H. W., 1953.—" Düngung und Kartoffelnematode." **4** (8), 418–422.
b. HEY, A., 1953.—" Ist der Kartoffelnematode aufzuhalten?" **4** (9), 480–483.

(524a) Nolte reviews the published work on the effects of manuring on eelworm disease of potatoes. He gives the results of an experiment in which Indore-compost was applied to land infested with potato root eelworm. Both numbers of tubers and yield were increased as compared with untreated plots but cyst numbers also increased more than on untreated plots. He concludes that manuring can increase the yield of potatoes on infested land but there is a danger that the eelworm population may also be increased. M.T.F.

(524b) This is a review of the distribution of potato root eelworm in Germany with recommendations for preventing its increase and spread. M.T.F.

525—Deutsche Medizinische Wochenschrift.

a. SCHOEN, R. & SCHNEIDER, H. H., 1953.—" Lässt sich die Bandwurmkur gefahrlos gestalten?" **78** (31/32), 1057–1059.
b. WIGAND, R. & WARNECKE, W., 1953.—" Über Bandwurmkuren (*Taenia saginata*)." **78** (44), 1493–1494.

(525a) Schoen & Schneider emphasize the need for strict medical control of the treatment of Taenia infections in man. They comment on recent cases in which one patient died from an overdose of chenopodium oil and another from an overdose of chloroform. After having tested various anthelmintics they recommend atebrin in a dosage of 0·7 gm. to 0·8 gm. in 100 c.c. water administered by duodenal sound. In six out of eight cases treated by this method a scolex was removed. The only side effect recorded was one case of acute psychosis which quickly cleared itself up: there was no sign of liver injury. A.E.F.

(525b) Wigand & Warnecke describe their technique for the treatment of *Taenia inguinata* infection by introducing air into the duodenum by means of a sound. Air is given at a rate of 50 c.c. to 110 c.c. per 15 minutes, 100 c.c. to 200 c.c. for 30 minutes or 200 c.c. to 300 c.c. per hour. Five children stood the treatment without difficulty, receiving a total of from 1·8 to 21 litres (average 6 litres) over a period of eight days. The intestines should be empty and the diet light. Of 51 patients given anthelmintic treatment alone, 21 were cured: of 36 given air insufflation, with or without male fern, benzine, atebrin or Epsom salts, 27 were cured. A.E.F.

526—Documenta de Medicina Geographica et Tropica. Amsterdam.

a. HARTZ, P. H., 1953.—" Histopathology of the colon in massive trichocephaliasis of children." **5** (4), 303–313.
b. JELLIFFE, D. B., 1953.—" *Ascaris lumbricoides* and malnutrition in tropical children." **5** (4), 314–320.
c. VAN DER KUYP, E., 1953.—" *Euclinostomum heterostomum* in Celebes." **5** (4), 329–332.
d. BRUYNING, G. F. A., 1953.—" Some data on the filaria vector *Culex quinquefasciatus* Say in Paramaribo." **5** (4), 333–338.
e. WINCKEL, W. E. F., FROS, J. & WIJNGAARDE, E., 1953.—" *Wuchereria bancrofti* in the upper eyelid." **5** (4), 343–346.
f. HARTZ, P. H., 1953.—"Dead macrofilaria and eosinophilic granulocytes." [Correspondence.] **5** (4), 378.

(526a) No lesions were present in two cases of massive infection with *Trichuris trichiura*, apart from some compression of the cellular elements of the mucous membrane. As massive infection only occurs rarely without associated malnutrition or concomitant infections, these must be eliminated before anaemia and other symptoms can be attributed to whipworm infection. R.T.L.

(526b) The most serious effect of *Ascaris lumbricoides* in children in many tropical countries, is its interference with nutrition rather than the more startling but rarer symptoms such as ascaris pneumonia, colic or brain invasions. Jelliffe summarizes from the literature the ways in which interference with nutrition can occur: by absorption through the cuticle or direct ingestion of intestinal contents; damage to the gut wall, by the biting of small lesions and possibly by the irritant effect of aldehydes from the worms; by accidental ingestion of blood; blockage of the gut with reduction of digestive surface; toxic action on the smooth muscle, resulting probably in faster movement through the intestine; and probably the neutralizing effect of "ascarase", which the worms secrete to protect themselves from digestion, on pepsin and trypsin. This last effect may be especially important in "latent kwashiorkor", in which pancreatic secretion is diminished through protein deficiency. The author reviews the digestion and storage of food in *A. lumbricoides* and reports the case of a four-year-old Jamaican boy who passed 120 adult Ascaris after treatment and showed rises in weight, in plasma proteins and absorption of amino-acids. M.MCK.

(526c) *Euclinostomum heterostomum* is redescribed and figured from dark grey herons in Celebes. The metacercaria was found in the fishes *Anabas testudineus* caught in rice fields. *E. africanum*, *E. clarias* and *E. indicum* are synonyms of *E. heterostomum*. *E. multicaecum* Tubangui & Masiluñgan, 1935 is placed in a new genus *Tumaclinostomum*, characterized by the extension of nearly all the caecal diverticula almost to the posterior end of the body. M.MCK.

(526d) In Paramaribo, Dutch Guiana, mosquitoes were caught inside the houses and examined a week later for microfilariae. A survey in the central area where the population had not been treated showed 25·6% of 1,887 female *Culex quinquefasciatus* to be infected. After the first treatment of the population with diethylcarbamazine early in 1950, 9·7% of 4,437 female mosquitoes revealed microfilariae. In 1951, 8·7% of 3,670 were infected. The numbers of *Aëdes aegypti* had remarkably decreased since Flu's investigation in 1927, as a result of spraying with D.D.T.; the 85 caught were all negative. The stages of the larvae

and location in the insects are recorded. Filarial embryos averaged 3·7 per infected mosquito in 1950 and 3·8 in 1951, actual figures varying between one and 41. The mature larvae wandered about the body of the mosquito after leaving the pectoral muscles without going directly to the labium. M.MCK.

(526f) Referring to Fros & Liqui Lung's paper which appeared in *Docum. Med. geogr. trop.*, **5**, 116–122 [for abstract see Helm. Abs., **22**, No. 336a], Hartz draws attention to his own observations of the relationship between dead macrofilariae and eosinophilic leucocytes in his papers published in 1944 and 1950 [for abstracts see Helm. Abs., **13**, No. 79b and **19**, No. 577a].

527—Dokladi Akademii Nauk SSSR.

a. MARKOV, G. S. & ROGOZA, M. L., 1953.—[Seasonal and micro-zonal differences in the parasite fauna of the grass-frog.] **91** (1), 169–172. [In Russian.]
b. BELOPOLSKAYA, M. M., 1953.—[*Balanus balanoides* L. as host of certain parasitic worms.] **91** (2), 437–440. [In Russian.]
c. VISOTSKAYA, S. O. & KULACHKOVA, V. G., 1953.—[Acarines as secondary hosts of roundworms.] **91** (2), 441–443. [In Russian.]
d. SPASSKI, A. A., 1953.—[The alternation of generations in cestodes.] **91** (2), 445–447. [In Russian.]
e. LOGACHEV, E. D., 1953.—[The localization of thymo-nucleonic acid in the parenchyma of cestodes in connection with the process of cell development.] **91** (3), 643–645. [In Russian.]
f. ORLOV, I. V. & ROMANOVA, N. P., 1953.—[Study of the life-cycle of the intestinal nematode of the river beaver—*Travassosius rufus* Khalil, 1922.] **91** (3), 703–704. [In Russian.]
g. ZELIKMAN, E. A., 1953.—[The life-cycle of the bird trematode *Gymnophallus affinis* (Jameson & Nicoll, 1913).] **91** (4), 989–992. [In Russian.]

(527a) In the district of Leningrad, Markov & Rogoza examined 1,130 grass frogs (651 adults, 213 young frogs and 266 tadpoles) and analysed the seasonal variation of their parasitic fauna. They record the following helminths: *Polystoma integerrimum*, *Tetracotyle crystallina*, *Gorgoderina vitelliloba*, *Dolichosaccus rastellus*, *Haplometra cylindracea*, *Pleurogenes claviger*, *Diplodiscus filiformis*. The extent and intensity of nematode infections are more or less at the same level throughout the year but they are slightly higher in summer. Larvae of *Tetracotyle* are commonest in the autumn and the adult flukes are mostly found in large numbers in winter; in the spring and summer, the infection is reduced. The paper contains three tables illustrating seasonal and biotopic variations of parasites in the grass frog. C.R.

(527b) In East Murman, Belopolskaya found that *Balanus balanoides* is the intermediate host for three types of cysticercoids. These are illustrated and described. In her opinion the cysticercoid "a" is probably the larval stage of *Fimbriarioides intermedia* which is a common parasite of *Somateria mollissima* in this region (74% of the adults and 75% of the chicks are infected). Cysticercoid "b" is attributed to *Anomotaenia clavigera* which occurs in *Calidris maritima* and in *Arenaria interpres*. Cysticercoid "V" could not be referred to any tapeworm. She also found metacercariae of *Maritrema gratiosum*. These were fed to *Larus argentatus*, *L. marinus*, *Rissa tridactyla*, *Sterna paradisea* and *Cepphus grylle*. Only *L. argentatus* and *L. marinus* became infected. C.R.

(527c) During a survey of fleas and acarines in 44 nests of *Somateria mollissima*, five out of 25 gamasid mites from the family Parasitidae were found to contain in the body-cavity nematode larvae which, in Visotskaya & Kulachkova's opinion, belong to *Streptocara dogieli*, a parasite of *Somateria mollissima*. They give a figure and a detailed description of the larva. C.R.

(527d) Spasski, discussing Gvosdev's paper on *Drepanidotaenia fragmentata*, is of the opinion that there are so many characters in which this species differs from the genus *Drepanidotaenia* that he creates a new genus, *Gvosdevilepis* n.g., with the following diagnosis: Hymenolepididae with unarmed scolex and without rostellum in which the strobila breaks into small fragments which survive in the intestine of the host independently of the mother

strobila; these undergo strobilization as a result of which proglottides are formed in which develop hermaphroditic organs and a uterus in which eggs develop; the aporal margins develop asymetrically; the genital organs are single and the genital pores unilateral; in each proglottis three testes develop and are situated porally from the genital glands; there are external and internal seminal vesicles; the uterus is saccular. In the adult stage, *Gvosdevilepis* are parasites of palaearctic *Duplicidentata*. The type species is *G. fragmentata* (Gvosdev, 1948) n.comb. Spasski thinks it highly probable that *Dicranotaenia evansi* will also be transferred to this new genus. C.R.

(527e) Logachev, from a study of the cytology of *Taenia saginata*, concludes that granules of thymo-nucleonic acid appear in the subcuticular layer as a result of the assimilation, from the intestine of the host, of the products of broken down nucleoproteids. These granules come together and eventually fuse, forming dense nucleonic regions which swell and, in the deeper parts of the parenchyma, form the origin of the "naked nucleus" of the pre-cell stage. A thin membrane of cytoplasm appears around the naked nucleus and the cell is formed. C.R.

(527f) Orlov & Romanova describe in detail the development of the free-living stages of *Travassosius rufus*. The eggs are laid at the 16 to 32-cell stage in water at 23°C. to 24°C. The larva is formed in 48 hours, hatches 48–60 hours later and is covered with a sheath. The larvae can also hatch in faeces. C.R.

(527g) Zelikman examined *Macoma baltica* and found 6·6% to be infected with the larval stages of *Gymnophallus affinis*. He describes and illustrates the sporocysts, and the cercariae and metacercariae which are contained in the sporocysts. Adults developed when these were fed to young gulls and to kittens. C.R.

528—Doriana. Genoa. [Supplement to Annali del Museo Civico di Storia Naturale "G. Doria".]

a. PUJATTI, D., 1953.—" Forme larvali di *Mesocestoides lineatus* Goeze in *Pitymys multiplex* Fatio." **1** (37), 7 pp.
b. PUJATTI, D., 1953.—" Rara anomalia in un *Cysticercus fasciolaris* (Rudolphi, 1808)." **1** (39), 5 pp.
c. PUJATTI, D., 1953.—" Sulla posizione sistematica dello *Sparganum hamadryadis* Teodoro, 1917." **1** (40), 3 pp.

(528a) Larvae of *Mesocestoides lineatus* were found in the abdominal cavity of a *Pitymys multiplex* in the Val Chiobba in northern Italy. This is a new host record and a new locality. P.M.B.

(528b) A strobilocercus of *Cysticercus fasciolaris* lacking a scolex was found in the liver of a *Pitymys multiplex*. The detached scolex was found calcified and encapsulated in an adjacent lobe of the liver. P.M.B.

(528c) The larval cestode described by Teodoro (1917) from *Hamadryas hamadryas* and provisionally named *Sparganum hamadryadis* is considered by Pujatti to be identical with a species of *Tetrathyridium*, probably *T. elongatus*, the larval form of *Mesocestoides lineatus*. P.M.B.

529—Down to Earth. Midland, Michigan.

a. CHRISTIE, J. R., 1953.—" The sting nematode can be controlled by soil fumigation." **9** (1), 8–9.
b. LUCAS, R. E. & DIETER, C. E., 1953.—" Ethylene dibromide for the control of nematodes in the organic soils of Michigan." **9** (3), 6–9.

(529a) Christie states that *Belonolaimus gracilis* is fairly common in Virginia, South Carolina, Georgia and Florida where it often causes very severe damage to maize, cotton, peanuts, millet, beans, celery, onions, peppers and strawberries. The nematode feeds

ectoparastically, inducing a characteristic stubby appearance to the root system. Soil fumigation with 40% ethylene dibromide at 10 gal.–20 gal. per acre gave reasonable control to enable successive susceptible crops to be grown but the eelworm population had become re-established by this time. J.B.G.

(529b) Lucas & Dieter give a short description of the injury caused to crop plants by nematodes, mentioning *Meloidogyne* spp., *Pratylenchus* spp., *Trichodorus* spp. and *Paratylenchus* spp. They give the results of experiments in which ethylene dibromide injected into root-knot infested soil at 6 gal. per acre increased the yield of marketable carrots from below 25% to above 90%. Treatments were more successful in the autumn than in the spring. Good results were also obtained on crops of celery and onions growing in nematode-infested soil. No effects on yield of sugar-beet, carrots and celery were seen after autumn application of ethylene dibromide to soil where nematode injury was not observable. M.T.F.

530—East African Medical Journal.

a. JORDAN, P., 1953.—" Filariasis in the Southern Highlands Province of Tanganyika." **30** (9), 361–367.

(530a) From a survey made during September and October 1952, it appears that bancroftian filariasis does not occur in the Southern Highlands Province of Tanganyika, except at the northern end of Lake Nyasa where the focus, already known, is apparently limited to a radius of about 16 miles from the lake. A second focus, not hitherto recorded, is now reported in the valley of the Great Ruaha River, about 40 miles N.N.W. of Iringa, where at Kimande the filarial rate in adult males was 24%. Several hundred persons were examined for onchocerciasis during the survey. No evidence of nodule formation was obtained. *Simulium damnosum* and *S. neavei* were present in large numbers at Njombe but the climatic conditions and the altitude of 5,600 ft. are thought to be unfavourable for the larval development of the parasite. R.T.L.

531—Ecology.

a. RAUSCH, R., 1953.—" Studies on the helminth fauna of Alaska. XIII. Disease in the sea otter, with special reference to helminth parasites." **34** (3), 584–604.

(531a) Of the eight helminth species which affect the sea otter (*Enhydra lutris*) in Alaska, *Orthosplanchnus fraterculus* is mildly pathogenic but *Porrocaecum decipiens* and *Microphallus pirum* are important pathogens. The paper is well illustrated by diagrams and by photomicrographs of the lesions. R.T.L.

532—Ekologia Polska.

a. SANDNER, H., 1953.—" Z badań nad wodami słonawymi w Polsce. Ekologia pijawek (Hirudinea) jezior: Łebsko i Sarbsko." **1** (3), 55–72. [English & Russian summaries pp. 70–72.]

(532a) Twelve species of leeches are recorded from the brackish water of lakes Łebsko and Sarbsko which are connected with the Baltic Sea. The number of leeches and the variety of species were found to increase as salinity decreased; in the zone of maximum salinity no leeches occurred. Areas sheltered from the action of waves were preferred. The leeches tended to avoid the water plants *Phragmites communis* and *Scirpus lacustris* and to be prevalent near *Typha* and *Stratiotes aloides.* P.M.B.

533—Empire Journal of Experimental Agriculture.

a. SPEDDING, C. R. W., 1953.—" The effect of a sub-clinical worm-burden on the liveweight gain of lambs." **21** (84), 255–261.

(533a) Six pairs of twin lambs were reared worm-free up to four months of age. One of each of the six pairs was then dosed with infective larvae of *Trichostrongylus axei* at three levels of infection, with two animals at each level, the number of larvae used being 4,000.

6,000 and 8,000 daily and the total number administered was 48,200, 73,000 and 115,800 respectively. The other twins of the six pairs were kept as controls in adjoining pens and were offered the same quantity and quality of food in the form of frozen grass and hay. The lambs were weighed daily on four successive days, both at the beginning and at the end of the experiment. Details of the live weights are tabulated. The egg counts, which were surprisingly low, were on an e.p.g. basis. The experiment lasted ten weeks in which the average gain in weight of the group of six worm-free lambs was 22·6 lb. per head, whereas the six infected lambs gained on the average only 10·9 lb. per head. It is concluded that the economic loss, even at subclinical levels, was considerable. R.T.L.

534—Eos. Revista Española de Entomología.

a. EBNER, R., 1953.—" Ein neuer Fall von Veraenderungen an einer Heuschrecke (Orthoptera, Acrididae) durch einen parasiten." **29,** 119–121.

(534a) Ebner briefly reports that a grasshopper, *Chorthippus* (*Stauroderus*) *biguttulus*, from the Tyrol was found to be parasitized by a worm presumed to be a Mermis. The worm was found in the abdomen which was greatly elongated. A.E.F.

535—Euphytica. Wageningen.

a. TOXOPEUS, H. J. & HUIJSMAN, C. A., 1953.—" Breeding for resistance to potato root eelworm. I. Preliminary data concerning the inheritance and the nature of resistance." **2** (3), 180–186. [Dutch summary pp. 185–186.]

(535a) Toxopeus & Huijsman describe the preliminary stages in breeding potatoes for resistance to potato root eelworm. They started with selfed seed from three clones of *Solanum andigenum* from the Commonwealth Potato Collection, clones which had been found resistant by Ellenby. Intercrossing of *S. andigenum* seedlings gave a progeny segregating for resistance in accordance with a simple dominant factor and tetraploid inheritance. Thus observed, segregation was in close agreement with theoretical expectation for the crosses duplex × duplex (36:1), duplex × simplex (11:1) and simplex × simplex (3:1). After crossing with commercial potato varieties, resistant progeny were slightly in excess of expectation. One seedling from one clone gave evidence of a different type of resistance (1:3) suggesting two dominant factors, both necessary for resistance to show itself. Resistant plants stimulate hatching and root-penetration and so act as a trap-crop. Introducing into commercial varieties genes for resistance will be a simple matter, but combining resistance with other desirable features will be very difficult. B.G.P.

536—Experimental Report of Government Experimental Station for Animal Hygiene, Tokyo.

a. ISHII, S., YAJIMA, A., SUGAWA, Y., ISHIHARA, T., OGATA, T. & HASHIGUCHI, Y., 1953.—" Experimental study on the infection of so-called lumbar paralysis of goat." No. 26, pp. 1–12.

b. YONEMURA, T., IIZUKA, M. & SHIGA, K., 1953.—" Study on absorption and excretion of antimony compounds." No. 26, pp. 13–19.

(536a) Experiments were carried out in order to demonstrate that the so-called lumbar paralysis of sheep and goats is due to the migrations of the infective larvae of *Setaria digitata* into the central nervous system. The authors suggest that a better description of the disease would be a "parasitological nervous paralysis". Nine goats were injected subcutaneously with the infective larvae of *S. digitata*. Of these, seven showed nervous symptoms and pathological lesions in the central nervous system related to the clinical symptoms. The pathological changes were limited principally to the brain and spinal cord and were considered to be due to the migration of the *S. digitata* larvae. The clinical symptoms caused by the artificial infection were identical with those observed in cases of so-called lumbar paralysis

of goats and sheep which occur in Japan from June to October. A sort of encephalomyelomalacia is caused by the migration of the larvae and develops into liquefaction and cavitation in the central nervous system. Histopathological changes in the brain and spinal cord of artificially and naturally infected goats were also identical. The authors therefore consider that this confirms that many cases of the so-called lumbar paralysis are due to *Setaria* larvae and not to an unbalanced quantity of phosphorus and calcium in the fodder. D.M.P.

537—Extension Folder. North Carolina State College of Agriculture.

a. BENNETT, R. R., NAU, H. H. & HAWKS, Jr., S. N., 1953.—" Methyl bromide for weed and nematode control in plant beds." No. 101, 5 pp.

538—FAO Plant Protection Bulletin. Rome.

a. MILLER, P. R., 1953.—" Plant disease situation in the United States." **1** (7), 104–105.
b. MILLER, P. R., 1953.—" The burrowing nematode and other parasitic nematodes in relation to spreading decline of citrus." **2** (3), 36–39.

(538a) The two sections of this paper deal with "Peanut yellows associated with a ring nematode" and "Powdery mildew on lettuce in California". In the first, Miller describes a severe chlorosis of peanuts in central east Georgia which gave the crop seen from a distance the appearance of a field of yellow Crotalaria in bloom. On root samples *Pratylenchus*, *Criconemoides* and *Helicotylenchus* were found. In soil samples taken 5th September and processed by the Baermann technique there was an average of 546 specimens of *Criconemoides* per 600 ml. sample from areas where the peanuts were diseased and 15·8 from the healthy areas. In plant samples taken three weeks later yellow plants yielded nearly 13 times as many *Criconemoides* as green. Although other factors may be involved it appears that there is an important association between *Criconemoides* and peanut yellows. M.T.F.

(538b) From observation and experiment it is clear that spreading decline of citrus is due to *Radopholus similis*. The eelworms attack the feeder roots causing lesions, leading to the death of these roots. Diseased trees are stunted, have fewer and smaller leaves, show a reduced yield, lack feeder roots and wilt more readily in dry periods. Control by the use of D-D mixture has been tried but no definite recommendations are yet possible. The use of resistant rootstocks is being tried. Other nematodes associated with citrus roots and reported, apparently for the first time, are *Hoplolaimus coronatus*, *Hemicycliophora* sp., *Trichodorus* sp., *Belonolaimus gracilis* and *Xiphinema americanum*. J.B.G.

539—Flygblad. Statens Växtskyddsanstalt. Stockholm.

a. ANON., 1953.—" Potatisålen." No. 99, 4 pp.

(539a) A popular description of the potato nematode, *Heterodera rostochiensis*, its occurrence in Sweden and how to control it by crop rotation is given. S.B.

540—Folia Clinica et Biologica. São Paulo.

a. PÉREZ FONTANA, V., 1953.—" Investigación de huevos de helmintos. Con especial referencia a la epidemiologia de la hidatidosis." **20** (2), 119–122.
b. COUTINHO, J. O., CROCE, J., CAMPOS, R., AMATO NETO, V. & FONSECA, L. C., 1953.—"Contribuição para o conhecimento da estrongiloidíase humana em São Paulo." **20** (3), 141–176.
c. REY, L., AMATO NETO, V., CAMPOS, R. & PEREIRA DA SILVA, L. H., 1953.—" Investigação sôbre um novo foco de esquistossomose em Uraí (Estado do Paraná)." **20** (3), 215–229. [English summary pp. 224–225.]

(540a) [This paper is substantially the same as one published by the author in *Rev. ibér. Parasit.*, 1953, **13**, 221–225. For abstract see Helm. Abs., **22**, No. 403c.]

(540b) [This paper is continued in *Folia clin. biol., S. Paulo*, 1954, **21**, 20–48, 93–120.]

(540c) There is a new focus of schistosomiasis mansoni at Uraí, Paraná State, Brazil. Faecal examinations and intradermal tests revealed 48 positive cases among 258 inhabitants examined. Some of these had never left the town. Planorbids very similar to *Australorbis glabratus* were extraordinarily abundant in a local clay pit used for bathing and fishing and yielded *Schistosoma mansoni* cercariae. Five other sites were also investigated and snails were found infected with bifurcate cercariae, viz., a *Dicranocercaria* and a cercaria not yet identified. [But see also No. 550g below.] M.McK.

541—Fortschritte auf dem Gebiete der Röntgenstrahlen.

a. HEUCK, F., 1953.—" Dünndarmveränderungen bei Askaridiasis als Ausdruck einer enteralen Allergie." **79** (3), 318–322.

(541a) Heuck points out that in very many cases of ascariasis diagnosed by X-rays, changes in the mucous membrane of the gastro-intestinal tract have been observed. The symptoms in the small intestine could be interpreted as an indication of an allergic reaction of the intestine. The X-ray findings in the small intestine are often characteristic of ascariasis but are not proof of an allergic affection of the intestine. The possibility of a parallergic reaction of the intestinal mucosa, previously sensitized by Ascaris antigens, is discussed. A.E.F.

542—Gaceta Médica de Caracas.

a. BACIGALUPO, J., 1953.—" Ascaridiasis hepática. (Parasitismo errático larval.)" **61** (5/6), 205–215. [English summary pp. 214–215.]
b. RUIZ RODRÍGUEZ, J. M., 1953.—" Síndrome de Banti bilharziano en Venezuela." **61** (7/9), 241–257.
c. TORREALBA, J. F., SCORZA, J. V., SANABRIA, M. S., DÍAZ VÁZQUEZ, A., RAMOS, B. I., RICCARDI, B. & JORDÁN, L. S., 1953.—" Nota preliminar sobre la acción malaquicida del fruto de paraparo (*Sapindus saponaria* L.)." **61** (10/12), 299–307. [English summary p. 306.]

(542a) Bacigalupo describes a case of ectopic ascariasis in which hundreds of parasites were present in the liver, bile-ducts and gall-bladder and discusses whether the adult parasites had invaded the liver from the intestine or had developed from larvae which had reached the liver by the portal vein or by the biliary tract. He concludes that the worms, having passed through the liver and lungs as larvae, reached the duodenum and eventually ascended the bile-duct. R.T.L.

(542b) Ruiz Rodríguez outlines the different causes of Banti's syndrome and describes its manifestations in schistosomiasis. He reviews the origin of the term and some of the literature appertaining to Venezuela. The clinical and blood pictures are given of 49 Venezuelan patients, mainly from regions endemic for *Schistosoma mansoni*, of whom 28 were passing *S. mansoni* ova in the faeces. M.McK.

(542c) A solution from the flesh of the berry of the "paraparo" tree, *Sapindus saponaria*, was tested on *Australorbis glabratus*. It had a lethal, haemorrhagic effect which, at a concentration of 1:10,000, lasted for ten days. A solution of a dried extract (obtained from the flesh by extraction with water or alcohol) was lethal to these molluscs at a minimum concentration of 1:50,000 and to five other genera at concentrations of 1:25,000 to 1:40,000. Forty-four fresh-water planktonic species were submitted to a 1:40,000 solution; 18 species were unharmed but in 24 species more than 50% of the individuals died within six hours. Insects, both larval and adult, were mostly unaffected. The lethal action on fish is already known and two species succumbed at concentrations of about 1:20,000. White mice died within 24 hours from injections of more than 6·6 gm. per kg. body-weight. The active fraction was seen from a study of chemical properties to be a powerful reducing agent. As an anti-schistosome measure in Venezuela the use of the "paraparo" berry is recommended. It is plentiful and its price would only be the cost of collecting. M.McK.

543—Gazette Médicale de France.

a. BUYLLA, P. A., LLAVONA, J. A. & VILLARROYA, P. F., 1953.—" Trichinose et A.C.T.H." **60** (21), 1171–1172.

(543a) Buylla *et al.* give a brief account of eight cases of trichinelliasis which they treated with ACTH. They used smaller doses than those reported on by other workers and found them to be equally efficacious. ACTH had a very marked effect on the temperature, myalgia and eosinophilia. Cortisone appeared to be slightly less effective. [See also No. 654c below.]

S.W.

544—Giornale di Batteriologia e Immunologia.

a. AZZI, A., 1953.—" Malattie da vermi. I. Distomatosi e bilharziosi." **45** (5/6), 235–260.
b. AZZI, A., 1953.—" Malattie da vermi. II. Malattie da cestodi." **45** (7/8), 349–374.
c. AZZI, A., 1953.—" Malattie da vermi. III (A) Parassitosi da nematelminti: ascaridiosi, ossiurosi, tricocefalosi, anguillulosi, anchilostomiasi." **45** (9/10), 441–462.
d. AZZI, A., 1953.—"Malattie da vermi. III (B) Parassitosi da nematelminti (trichinosi, acantocefalosi, filariosi). IV. Parassitosi da anellidi." **46** (1/2), 52–75.

545—Grower. London.

a. MORETON, B. D., 1953.—" Rotation is the best defence against eelworm." **40** (23), 1034–1035.

(545a) Moreton gives a general account of the potato root eelworm and stresses its increasing importance as a pest of green-house tomatoes. Although soil fumigation may be effective, especially in green-houses, he is of the opinion that satisfactory control in the field can at present only be obtained by crop rotation. In practice the ground should be rested for more than three years between successive potato crops as self-set potatoes may persist for several years and will carry on the infestation. Care should be taken to minimize the number of self-sets.

S.W.

546—Hawaii Medical Journal.

a. STEMMERMANN, G. N., 1953.—" Human infestation with *Fasciola gigantica*." **13** (1), 19–22.

(546a) [A fuller account of this paper appears in *Amer. J. Path.*, 1953, **29**, 731–753. For abstract see No. 458a above.]

547—Hirosaki Medical Journal.

a. AKIMOTO, T., SATO, G., ABO, S., SASAMURA, M. & INOUE, N., 1953.—[The relation between the parasitization of *Ascaris lumbricoides* and abdominal pain in Hirosaki city.] **4** (3), 235–239. [In Japanese: English summary p.*46.]
b. MATSUNO, K., 1953.—[Supplementary report on the histo-pathological information of the change of the liver in bile duct ascariasis.] **4** (4), 289–297. [In Japanese: English summary p.*64.]

(547b) Of 169 cases of bile-duct disease treated surgically in the Akita Prefectural Hospital 71 were caused by the invasion of Ascaris. Living Ascaris were present in the bile-ducts of 38 cases and 14 of these showed histopathological changes in the liver, even in parts without macroscopic lesions. Twenty of the other cases with Ascaris also showed histological changes in the liver.

S.W.

548—Hoppe-Seyler's Zeitschrift für Physiologische Chemie.

a. FLASCHENTRÄGER, B. & TAHA, M. M., 1953.—" Zur Biochemie der Bilharziasis." **295**, 285–289.

(548a) Flaschenträger & Taha present a paper on *Schistosoma haematobium* which is in four parts. The first describes a technique for recovering ova from urine by means of filters of rustless steel thread, one of which keeps back mucus, pus, blood clots and large

crystals and allows ova to pass while the next (with a mesh of 0·042 mm.) retains ova. The second part reports an experiment which shows that miracidia hatch most rapidly and completely in a *p*H of 6·8 to 9·2. In the third part the authors show that miracidia are most active in a *p*H of between 7·4 and 8·0. Finally, an apparatus called a "tasteproofer" is described which is designed to test whether miracidia prefer an acid or alkaline medium: experiments with the apparatus were not decisive. A.E.F.

549—Horticultura. Copenhagen.

a. LINDHARDT, K., 1953.—" Varmtvandsbehandling—et middel mod jordbaerâl." **7** (7), 68–69.

(549a) In a brief note Lindhardt reports that experiments at Spangsbjerg Research Station (Denmark) in 1953 have shown that Staniland's warm-water treatment of strawberry plants can be successfully applied to Danish varieties for elimination of eelworm. Plants should be immersed for ten minutes at 115°F. and then placed immediately in cold water. A.E.F.

550—Hospital. Rio de Janeiro.

a. PESSÔA, S. B. & BARROS, P. R., 1953.—" Sôbre o diagnóstico da esquistossomose mansônica na infância, pela intradermo-reação com antígeno de esquistossomas adultos." **43** (1), 19–25.
b. PESSÔA, S. B. & COUTINHO, J. O., 1953.—" A esquistossomose mansônica como doença do trabalho." **43** (4), 429–436.
c. MENDES, E., 1953.—" Resultado de 400 testes intradérmicos para verificação de triquinose." **44** (1), 87–89. [English summary p. 89.]
d. BASTOS PEREIRA, R., 1953.—" O fígado na esquistossomose de Manson. (Follow-up de provas de função hepática em 230 pacientes.)" **44** (1), 115–125. [English summary pp. 123–124.]
e. PEREIRA, O. A. & AMATO, S., 1953.—" Considerações sôbre um caso de esquistosomose mansônica, de Jacarepaguá." **44** (3), 349–353.
f. REY, L., 1953.—" A freqüência provável da esquistossomose mansônica em São Paulo." **44** (5), 589–597. [English summary pp. 595–596.]
g. VERONESI, R., AMATO NETO, V. & SEGAL, J., 1953.—" Esquistossomíase mansônica em paciente procedente de Uraí (Estado do Paraná)." **44** (6), 783–786.

(550a) Intradermal tests were carried out on persons with eggs of *Schistosoma mansoni* in their faeces. The reactions were positive in 59 out of 61 individuals aged over 15 years, in 66 out of 72 children aged 11–14 years and in 93 out of 109 aged 5–10 years. In the 11–14 years group 71·2% gave strong positives and 28·8% medium positives, compared with 52·7% strong and 47·3% medium in the 5–10 years group. The proportion of positives was 94·1% in 102 coloured children and 79·5% in 83 white children. There was no significant difference in the reactions according to sex. P.M.B.

(550b) An analysis is presented of the symptomatology and blood picture in 18 cases of schistosomiasis mansoni at Aracaju, Sergipe, Brazil. These occurred among employees of the anti-malaria service who were engaged in clearing drainage ditches in which 8·5% of the numerous *Australorbis glabratus* present were found infected in 1952. The infections were very severe as the men had been working for some years under conditions of constant exposure to cercariae, with no attempt at protection of the feet and legs. P.M.B.

(550c) No case of trichinelliasis has yet been recorded in Brazil and intradermal tests with Trichinella extract on 400 Brazilians, nearly all from the State of São Paulo, were all negative. P.M.B.

(550d) In 230 cases of hepato-splenic and hepato-intestinal schistosomiasis mansoni, nearly all at an active stage, liver function tests by cephalin-cholesterol flocculation, thymol flocculation and thymol turbidity were compared. The high sensitivity of the cephalin-cholesterol and thymol turbidity tests in indicating the degree of liver involvement leads Bastos Pereira to the conclusion that these tests should be adopted in preference to puncture biopsy, except in cases of obscure aetiology or for studying particular cases of fibrosis or

cirrhosis. The tests also constitute a guide to therapeutic procedure: those cases with negative or weak positive reactions to thymol turbidity and flocculation tolerated antimonial treatment well, whereas those with a strong positive cephalin-cholesterol reaction and with a thymol turbidity reaction of over 6 (MacLagan) showed poor tolerance. In those with negative reactions the possibility of a cure was considered likely. P.M.B.

(550f) Rey estimates that in the State of São Paulo there are at least 91,850 cases of *Schistosoma mansoni*, of which 19,030 are in the city of São Paulo. This estimate is based on the incidence for 11 States as given by Pellon & Texeira in 1950 and on official statistics of immigration into São Paulo from States where the disease is endemic. M.MCK.

(550g) A case of *Schistosoma mansoni* was diagnosed at São Paulo in a resident of Uraí, Paraná State. If, as is probable, the infection was acquired there, this would be the first record of *S. mansoni* in Uraí. [But see also No. 540c above.] M.MCK.

551—Indian Journal of Helminthology.

†a. GUPTA, S. P., 1953.—" Trematode parasites of fresh-water fishes." **5** (1), 1–80.

††b. GUPTA, R., 1953.—" Studies on trematode parasites of Indian birds. I. On *Echinochasmus antigonus* n.sp., from sarus crane, *Antigone antigone* Linn." **5** (2), 81–86.

††c. GUPTA, S. P., 1953.—" Two new trematodes belonging to the sub-family Opecoelinae Stunkard, 1931, with a key to the known genera." **5** (2), 87–100.

††d. SRIVASTAVA, N. N., 1953.—" On the morphology and systematic position of a new avian trematode *Thapariella anastomusa* n.g., n.sp., with a suggestion on the creation of a new family Thapariellidae." **5** (2), 101–108.

††e. KHERA, S., 1953.—" *Monovaria rhinolophensia* n.g., n.sp. (sub-family Seuratinae Hall, 1916: family Cucullanidae Cobbold, 1864: Nematoda) from the bat, *Rhinolophus affinis*." **5** (2), 109–114.

††f. KHERA, S., 1953.—" *Pseudoproleptus vestibulus* n.g., n.sp. (subfamily Physalopterinae Railliet, 1893: family Physalopteridae Leiper, 1908: Nematoda) from the fish, *Mastacembelus armatus* (Lacep.)." **5** (2), 115–120.

††g. THAPAR, G. S. & TANDON, R. S., 1953.—" Addendum to the 'Life history of liver fluke, *Fasciola gigantica* Cobbold, 1885 in India'." **5** (2), 121.

(551a) Sixteen new trematodes of which six are made types of new genera were collected from ten species of Indian fresh-water fishes. *Neobucephalopsis eutropiichthis* n.sp. from *Eutropiichthys vacha* is distinguished from *N. bagarius* chiefly by the extension of the vitellaria to the pharynx, the position of the ovary behind the pharynx and by the cirrus sac which, in the new species, is about one-sixth of the body length instead of one-third. *N. pseudeutropei* n.sp. from *Pseudeutropius garua* differs from *N. bagarius* mainly in the larger size of the body (2·21 mm. long), in the position of the ovary on a level with the pharynx, in the position of the testes between the cirrus sac and intestine and in that the cirrus sac is one-quarter of the body length. The relative size, and the extension of the cirrus sac from the posterior end of the posterior testis almost to the posterior end of the body, are characters differentiating it from *N. eutropiichthis*. *N. gauhatiensis* n.sp. from *P. garua* is distinguished from other species by the disposition of the testes one on each side of the cirrus sac, by the length of cirrus sac which is half as long as the body and by the position of the pharynx behind the anterior testis. *Gauhatiana batrachii* n.g., n.sp., a fellodistomatid from *Clarias batrachus*, is similar to *Proctoeces* but differs chiefly in having a Y-shaped excretory bladder with a sigmoid stem and dorsal posterior pore, in the structure of the cirrus sac (in which the vesicula seminalis and pars prostatica are tubular), and in the possession of a muscular genital sinus in front of the acetabulum and a large receptaculum seminis. *Phyllodistomum vittatusi* n.sp. from *Macrones vittatus* is characterized by a tubular excretory bladder and a small genital pouch receiving the openings of both male and female ducts. *Thaparotrema vittalani* n.g., n.sp. reported from *Rita rita* closely resembles *Opisthorchis*, but unlike other genera of the Opisthorchiinae the vitellaria reach from in front of the ventral sucker to the posterior end of the anterior testis and there is an anterior swelling on the excretory bladder. *Gomtiotrema*

† Issued January 1955. †† Issued February 1955.

attu n.g. [but this is preoccupied by *Gomtiotrema* Sinha, 1934] n.sp. from *Wallagonia attu* is opisthorchid in main characters but the sac-like oesophagus is divided into two parts posteriorly and surrounded by numerous gland cells; the vesicula seminalis, a coiled, thin-walled tube, lies in front of the acetabulum and is surrounded by prostate gland cells; the vitellaria extend from the middle of the body, far behind the acetabulum, to the tip of the gut caeca; the genital pore is surrounded by strong sphincter muscles; the receptaculum seminis lies in front of the ovary and the excretory bladder is Y-shaped with a long straight stem and a dorsal pore. *Assamia gauhatiensis* n.g., n.sp. from *Rita rita* differs from other opisthorchids chiefly in (i) the presence of a muscular oesophageal pouch from the dorsal side of which arise the gut caeca and (ii) having a long tubular excretory bladder with a vesicular structure anteriorly from the side of which arise two small lateral branches which extend to the anterior region of the ovary. It is similar to *Gomtiotrema* [see above] but the ventral sucker is relatively further back, i.e. about one-third of the body length from the anterior end, and the genital organs lie behind the acetabulum in the middle third of the body. For *Gomtiotrema* and *Assamia* the subfamily Gomtiotreminae n.subf. is created and the Opisthorchiidae is accordingly emended and redescribed. *Haplorchoides gomtioensis* n.sp. from *Silondia gangetica* is distinguished from other species of *Haplorchoides* by the presence of the receptaculum seminis in front of the ovary, by the extension of the vitellaria to the anterior region of the receptaculum seminis and by the position of the ovary between the receptaculum seminis and testis. *H. ritai* n.sp. from *Rita rita* resembles *Haplorchoides attenuatum* but it has a smaller oesophagus and the anterior is much larger than the posterior seminal vesicle. The intestinal caeca extend to the posterior half of the post-testicular region and the vitellaria almost reach the posterior tip of the body. *H. brahamputraensis* n.sp. from the same host is distinguished from *H. ritae* and related forms by the position of the genital pore outside the gut caeca and by the smaller size of the receptaculum seminis compared with the ovary. *H. seenghali* n.sp. from *Macrones seenghala* differs from the nearest species *H. ritai* and other related species in the size and extent of the vesicula seminalis, which is bilobed and lies between the right caecum and the ovary and, except for *Haplorchoides attenuatum*, in the position and size of the receptaculum seminis, which measures 0·12 mm. by 0·18 mm. and is behind and close to the ovary, and in the position of the genital pore on the left intestinal caecum. *Masenia dayali* n.sp. from *Clarias batrachus* differs from the most similar species *M. collata* mainly in the extension of the vitellaria from the middle of the acetabulum to the posterior end of the anterior testis, in that the gut caeca reach the posterior end of the anterior testis, in the position of the ovary far anterior to the testes, the sack-like shape of the excretory bladder and in that the eggs are oval and operculate. *M. fossilisi* n.sp. from *Heteropneustes fossilis* has non-operculate eggs and differs from *M. collata* mainly in the distribution of the vitelline glands from the anterior end of the acetabulum to the middle of the anterior testis, and in that the gut extends almost to the posterior testis. A new family Masseniidae is created. *Brahamputrotrema punctata* n.g., n.sp. from *Ophicephalus punctatus* differs from other monorchids in the distribution of the vitellaria from the middle of the pharynx to the middle of the ovary, in the presence of a tubular excretory bladder extending to the posterior end of the ovary with side branches opening into it, in the presence of an unarmed protruded cirrus and in the absence of a muscular metraterm. *Oudhia horai* n.g., n.sp. from *Heteropneustes fossilis* is similar to *Neorenifer* but has a well developed receptaculum seminis, a well developed cirrus sac extending to the posterior end of the ventral sucker, a vesicula seminalis divided into two parts and a funnel-shaped oral sucker. Cephalogonimidae (emended and redescribed), Fellodistomatidae, Gorgoderidae, Opisthorchiidae and Haplorchiinae, which is emended, are discussed in detail and keys are given for the subfamilies of Opisthorchiidae, for the species of *Masenia*, *Haplorchoides* and *Neobucephalopsis* and for the Indian species of *Phyllodistomum*. M.MCK.

(551b) *Echinochasmus antigonus* n.sp. from a sarus crane (*Antigone antigone*) shot in the outskirts of Hardoi, India, is characterized by an extremely elongate body and longitudinally elongate testes 0·462 mm. to 0·76 mm. apart. It is distinguished from *E. gorsaki*

by the pharynx being smaller than the oral sucker and by the 24 collar spines which measure 0·065–0·08 mm. in length by 0·03–0·041 mm. at their base and lie in a single row broken dorsally. *E. antigonus* is differentiated from other related species by the size and arrangement of collar spines. Moreover the vitellaria do not reach the ventral sucker. M.MCK.

(551c) *Neopecoelina saharanpurensis* n.g., n.sp., unlike other Opecoelinae, possesses a muscular cirrus, an excretory bladder extending from the hind end to the testes, a muscular cirrus sac containing the vesicula seminalis, a non-protrusible acetabulum smaller than the oral sucker and lacks an external seminal vesicle. The common intestinal and excretory opening (uroproct) likens the new form, recorded from the fresh-water fish *Macrones cavasius* and *Heteropneustes fossilis*, to *Pseudopecoeloides* and *Opecoeloides*. *Lucknoides cavasiusi* n.g., n.sp. in *M. cavasius* resembles *Neopecoelina* in general shape, form of suckers, extent of excretory bladder and structure of the gut, but differs chiefly in possessing a bulbous oesophagus, a bipartite seminal vesicle, a lateral genital pore, and in the position of the ootype which is in front of the ovary. It is proposed to remove the genera *Coitocaecum* and *Pseudopecoelus* from the Opecoelinae as neither has an anus. A diagnosis is given of the Opecoelinae thus emended with a key to its genera. M.MCK.

(551d) *Thapariella anastomusa* n.g., n.sp. from the gap-bill stork *Anastomus oscitans* is intermediate between the Halipeginae (family Hemiuridae) and the Leucochloridiinae (Brachylaemidae). The general shape, the absence of a cirrus sac, the situation and arrangement of the gonads and vitellaria are hemiurid characters but the genital pore is at the posterior end of the body as in the Brachylaemidae. *Thapariella* differs from both families in the V-shape of the excretory bladder and in the configuration of the uterus and is therefore made the type of a new family Thapariellidae. M.MCK.

(551e) As *Monovaria rhinolophensia* n.g., n.sp. has two rudimentary lips, each bearing a pair of papillae, and an undivided muscular oesophagus it is assigned to the Seuratinae. The new form is recorded from the bat *Rhinolophus affinis* and is nearest to the genus *Seuratum* but has no cuticular spines and possesses in the male expanded hook-like caudal structures, possibly of copulatory function, hitherto found only in the free-living species *Richtersia beauforti* of the family Desmodoridae. The female is peculiar in having one ovary and one uterus, which forms a temporary reservoir for storing ova, with rudiments of another set near the vagina. A key differentiates the genera of the Seuratinae. M.MCK.

(551f) *Pseudoproleptus vestibulus* n.g., n.sp., a physalopterid from the fresh-water fish *Mastacembelus armatus*, is very similar to *Proleptus* but differs in the presence of a vestibule behind the mouth, in the absence of caudal alae in the male and in the structure of the female reproductive system. The opposed ovaries are situated one near the anus and the other slightly behind the oesophagus, and the two uterine tubes lead into a narrow vagina with a small ovejector. The vulva is post-equatorial. A key is provided for the genera and subgenera of the Physalopteridae. M.MCK.

(551g) In accordance with Varma's opinion that the common liver-fluke in India is not *Fasciola gigantica* [for abstract see Helm. Abs., **22**, No. 362i], Thapar & Tandon propose that *F. indica* Varma, 1953 should replace *F. gigantica* throughout their paper which appeared in *Indian J. Helminth.*, **4** (2), 1–36 [for abstract see Helm Abs., **21**, No. 912a]. R.T.L.

552—Indian Journal of Medical Research.

a. SHRIVASTAV, J. B., 1953.—"A survey of the intestinal parasites in the human population in Bombay, with special reference to *Endamoeba histolytica*." **41** (4), 397–414.

(552a) This is a survey of the various intestinal parasites harboured by a static population in Bombay. The following summarized data were obtained from single stool examinations. Of 384 apparently healthy individuals, 12·2% were infected with hookworm, 2·9% with tapeworm and 22·4% with *Ascaris lumbricoides*. Of 1,010 persons with vague abdominal symptoms

ıe corresponding percentages of infection were 16·6%, 3·4% and 20·2%. Of 104 cases of cute dysentery, 5·8% harboured helminths. Results show that highly pathogenic organisms, specially hookworm, may be present in 10%–20% of the population without causing symptoms. G.I.P.

53—Indian Medical Gazette.

a. GHOSE, C., 1953.—" Studies on metabolism of calcium, inorganic phosphorus and cholesterol in pregnancy with helminthic infection in Indian women." **88** (8), 440–447.

54—Informatore Fitopatologico, Bologna.

a. FOSCHI, S., 1953.—" L'anguillulosi della fragola." **3** (17/18), 155–158.

(554a) Foschi gives a general account of the attack by *Ditylenchus dipsaci* on strawberry ı Italy and mentions some of the ways in which control may be effected. J.B.G.

55—Japanese Journal of Experimental Medicine.

a. MORISITA, T., KOBAYASHI, M. & NAGATA, J., 1953.—" On the hook-worm infection circuit traced with isotope P32 marked larvae." **23** (6), 531–536.

(555a) Rhabditiform larvae of the dog hookworm, soon after their first ecdysis, were ultured in a solution containing Isotope P32. The resulting ensheathed filariform larvae ontained a quantity of P32 in their bodies. When mice were infected orally with 1,000 of ıese radio-active larvae some of the larvae migrated into the organs of the host via the mucous ıembrane of the mouth and oesophagus. Most of the larvae remained in the digestive canal ıd excreted P32 into the gut when they shed their skins. After skin infection of mice some ırvae were found in the intestine within four hours. In young dogs which were infected ıtaneously with 8,000 *Ancylostoma caninum* larvae no larvae were found in the digestive anal five hours after infection. D.M.

56—Japanese Journal of Medical Science and Biology.

a. ITO, J., 1953.—" Redescription of *Cercaria incerta* Faust, 1924, a cotylomicrocercous cercaria in snail host *Semisulcospira* spp. in Japan, (Trematoda)." **6** (3), 289–297.
b. KOMIYA, Y. & YASURAOKA, K., 1953.—" The behavior of *Oncomelania nosophora*, the first intermediate host of *Schistosoma japonicum*, in water." **6** (5), 451–461.
c. ISHII, K., 1953.—" A differential staining for living and dead larval trematodes." **6** (5), 481–485.
d. ITO, J., 1953.—" Two cystophorous cercariae, *C. introverta* Faust, 1942 [1924], and *C. longicerca* n.sp. from fresh water snail, *Semisulcospira* spp. in Japan, with a list of cystophorous cercariae." **6** (5), 487–492.
e. KOMIYA, Y. & KAWANA-TAJIMI, T., 1953.—" The development of the excretory system of *Clonorchis sinensis* in its definitive host." **6** (6), 571–575.

(556a) The published descriptions of the microcercous cercariae found in Japan, except ıat of *Paragonimus westermanii*, are incomplete. Ito now gives a detailed and illustrated ccount of the morphology of *Cercaria incerta* in *Semisulcospira libertina*, *S. reiniana* and . *japonica*. A table of its geographical and seasonal distribution in Japan is given. The other x Japanese microcercous cercariae are listed. Microcercous A of Kobayashi, 1922 and Cercaria of Yoshida, 1917 are identical with the cercaria of *P. westermanii*. Microcercous B of obayashi, 1922, Cercaria XVI of Nakagawa, 1915, Cercaria D of Yoshida, 1917 and Cercaria Mi" of Ando, 1918=*Cercaria distyloides* Faust, 1924; Cercaria "Tei" of Ando, 1918 and licrocercous C of Kobayashi, 1922=*C. conoidea* Faust, 1924; Microcercous D of Kobayashi, 922=*C. diminicrura* Faust, 1924 in Korea; Microcercous E of Kobayashi, 1922=*C. incerta* aust, 1924; Microcercous F of Kobayashi, 1922 and Cercaria I of Osafune, 1898= . *libertina* Faust, 1924; Cercaria I of Yokogawa & Wakeshima, 1934 from Formosa sembles *C. incerta* but differs in the number of penetration glands and in the shape of its ylet. Attention is drawn to the erroneous use of "redia" for "parthenita" in the original

description of the development of *C. incerta* and in all the early reports on Japanese microcercous cercariae mentioned above. Among the world's microcercous cercariae only *C. columbellae*, *C. myzura* and *C. trigonura* and the cercaria of *P. westermanii* develop in rediae. R.T.L.

(556b) In the laboratory when *Oncomelania nosophora*, which had been away from water for about a week, were submerged to a depth of 10 cm. or 20 cm., 60% to 70% crept out of the water within 24 hours. Of those snails which remained in the water almost all were on the walls of the container within 2 cm. of the surface of the water. The experiment was repeated using a random sample of snails from those which had moved out of water and a random sample of those which had remained in it. No significant difference between the two groups was observed. S.W.

(556c) Ishii describes a technique which provides a simpler, speedier and more accurate means of ascertaining the death of large numbers of larval trematodes than by observing the cessation of movement of the body, cilia and flame cells. A freshly prepared 1% aqueous solution of neutral red is mixed with an equal volume of the fluid containing the larvae; half the amount of a 0·1% potassium hydroxide solution which penetrates dead tissue is added immediately. Whereas living larvae become bright red, the dead ones take on an intense orange-yellow tinge. Examination must be made within five to ten minutes. Higher concentrations give sharper contrasts but are more lethal. The larvae should be washed by centrifuging if the medium is strongly acid, alkaline or contains some salts. As the toxicity of the mixture varies with different organisms, its effect on a sample should be determined before the test is applied. G.I.P.

(556d) Ito lists 26 species of cystophorous cercariae and describes two rare Japanese forms from *Semisulcospira japonica* collected in Kochi Prefecture, Japan. *Cercaria longicerca* n.sp. resembles *C. yoshidae* in general appearance; it differs, however, in the shape and structure of the tail which is six times longer than the body but is weakly developed and swollen in the anterior portion. *Cercaria introverta* Faust, 1924 is redescribed and figured. G.I.P.

(556e) The flame cell formula of the cercaria of *Clonorchis sinensis* remains unchanged in the metacercaria. A further study of the excretory system was made by feeding mice on metacercariae obtained from the muscles of naturally infected *Sarcocheilichthys nigripennis* and then dissecting out the worms from the host's liver at periods of one to 24 days after infection. No change of formula occurred up to ten days after infection, then each original flame cell divided into six to fourteen cells, but there was no regularity of division. This expansion of the flame cells of *C. sinensis* in the definitive host closely resembles that seen in *Fasciola hepatica* and *Echinochasmus* but differs from *Metorchis orientalis* where the increase in flame cells occurs in the metacercaria. G.I.P.

557—Journal of the American Medical Association.

a. KUSHLAN, S. D., 1953.—" Trichinosis with liver dysfunction, hypoalbuminemia, and typhoid agglutinins." **152** (3), 221–224.

558—Journal of Animal Ecology.

a. MANN, K. H., 1953.—" The life history of *Erpobdella octoculata* (Linnaeus, 1758)." **22** (2), 199–207.

(558a) The life-history of *Erpobdella octoculata* as observed in a brook at Mortimer, Berkshire, begins in June or July with the laying of cocoons from which the young leeches emerge in August and September. The following July all except about 13% of the smaller specimens reach maturity and breed. The next June all the group hatched two years previously breed and all except about 13% then die; those surviving are presumably the 13% which did not reach maturity in the first year and these then breed again during the third year. Thus it appears that all individuals breed twice during their lifetime. There seems to be a body-weight of about 60 mg. below which sexual maturity is not reached. The average

number of young in each cocoon is estimated at 4·7 and the number of young produced per year by each leech at 23·5; about 20 of these, however, are lost during the first three or four months, mainly through being devoured by larger leeches or by molluscs, and subsequently their numbers are halved in each succeeding year. P.M.B.

559—Journal of the Bombay Natural History Society.

a. SMYTHIES, B. E., 1953.—" Notes and queries on land leeches." **51** (4), 954–958.
b. HARRISON, J. L., 1953.—" Sexual behaviour of land leeches." **51** (4), 959–960.

560—Journal of the Christian Medical Association of India.

a. SUNDARA RAJ, S. T. & MATHEN, M., 1953.—" Hydatid disease of the liver. Brief review and report of a case with three cysts in the liver." **28** (1), 17–22.

561—Journal of the Department of Agriculture. South Australia.

a. HUMBLE, A. E., 1953.—" Hydatids—a disease of animals and humans." **57** (1), 11–13.
b. SMITH, W. S. & KEOGH, J., 1953.—" Liver fluke and black disease in South Australia." **57** (3), 101–106.
c. SMITH, W. S., 1953.—" Internal parasites of sheep." **57** (5), 196–204.

(561b) Smith & Keogh describe the distribution of *Fasciola hepatica* and *Simlimnaea subaquatilis* in South Australia. They tabulate the seasonal incidence of the hatching of liver-fluke ova, infestation of pastures with metacercariae and the death rates in sheep from acute fluke disease, black disease and chronic fluke disease. The symptoms of all three are described and treatment and control measures outlined. S.W.

(561c) Smith gives a comprehensive general account of the nematodes, including lungworms, and cestodes which occur in sheep in South Australia. He describes symptoms, diagnosis and treatment, and illustrates three types of drenching gun and the correct method for their use. Under "Drenching Precautions" he discusses lambing sickness, photosensitization and drenching gun injuries. The species are tabulated together with their location in the host, egg-laying capacity, life-cycle, seasonal conditions, damage done, predisposing factors, symptoms etc. S.W.

562—Journal of the Egyptian Medical Association.

a. CHANDLER, A. C., 1953.—" The relation of nutrition to parasitism." **36** (9), 533–552.
b. EL RAMLY, Z., SOROUR, A., EL SHERIF, A., LOUTFY, M. & IBRAHIM, M., 1953.—" A clinical and haemodynamic study of cardio-pulmonary bilharziasis using the technique of cardiac catheterisation." **36** (10), 567–586.
c. EL SHERIF, A., 1953.—" The electro-cardiogram in chronic pulmonary bilharziasis." **36** (10), 587–600.
d. EL-RAMLY, Z. & ABDIN, F., 1953.—" A clinico-pathological report of a case of advanced bilharzial cor pulmonale." **36** (10), 638–643.
e. EFFAT, S., 1953.—" Bilharzial cor pulmonale (bilharzial ayerza)." **36** (11), 728–731.
f. MAKAR, N., 1953.—" Some observations on the surgical treatment of cancer of the bilharzial bladder." **36** (12), 762–778.
g. CHANDLER, A. C., 1953.—" Immunity in parasitic diseases." **36** (12), 811–834.

(562a) In this lecture, Chandler reviews recent literature dealing with the effect of the nutrition of the host on protozoal, helminthic and arthropod infections. In well nourished animals the development of specific immunity against helminth infections results in retardation of development of the adult stage with stunting and inhibition of reproduction, premature expulsion of the existing infection and resistance to reinfection. With a deficient diet these immunological effects develop more slowly or not at all and the host's ability to repair damaged tissue and to replace blood lost is gravely affected. Against adult tapeworms, however, no specific immunity develops but the host suffers from the appropriation of nutrients by the worms. The primary anaemia in *Diphyllobothrium latum* infection is due to the avidity with which the tapeworm absorbs the anti-anaemic factor. That sex hormones are apparently

necessary for the normal growth and reproduction of *Hymenolepis diminuta* is shown by the effect on infected rats of adding yeast to a purified diet. The worm egg output from male rats falls much more slowly than that from female rats indicating that the yeast provides a gonadotropic substance. R.T.L.

(562g) In this series of lectures delivered at the Kasr-el-Aini Faculty of Medicine, Cairo, Chandler reviews published work on immunity in helminth infections and compares the immune reactions which have been observed in these with those found in bacterial, rickettsial and protozoan infections. S.W.

563—Journal of the Elisha Mitchell Scientific Society.

a. HARKEMA, R., 1953.—" Swimmer's itch in Alaska." [Abstract of paper presented at the 50th Annual Meeting of the North Carolina Academy of Science, Raleigh, May 8–9, 1953.] **69** (2), 97.

b. LARSH, Jr., J. E. & RACE, G. R., 1953.—" A histopathologic study of the anterior small intestine of immunized and non-immunized mice infected with *Trichinella spiralis*." [Abstract of paper presented to the Elisha Mitchell Scientific Society, March 10, 1953.] **69** (2), 105.

(563a) In a survey of 76 bodies of water in Alaska in the summer of 1952, 16 were found to harbour snails infected with itch-producing cercariae not yet specifically identified. These were in the Fairbanks area, Yukon flats, and near the Tok and lower Alaska Highways. Of the 10 species of molluscs collected the commonest species found were *Limnaea palustris* and *L. stagnalis*; both these harboured cercariae, the itch-producing ability of which was demonstrated. The highest incidence of schistosome cercariae was in late July and August. Naturally acquired clinical cases of schistosome dermatitis occurred. R.T.L.

(563b) [This abstract also appeared in *J. Parasit.*, 1953, **39**, Suppl. p. 40. For abstract see Helm Abs., **22**, No. 222dc.]

564—Journal of the Faculty of Medicine of Baghdad, Iraq.

a. WATSON, J. M., 1953.—" Studies on bilharziasis in Iraq. Part VIII. Relationship of incidence to age." **17** (1/2), 1–18.

(564a) In urine examinations of over 30,000 individuals, mostly males, in Iraq, *Schistosoma haematobium* was present in 21·3% to 26·7% of the different age groups, except those under four years old (of which too few cases were examined to give reliable results) and the group 15–19 years old, where the incidence was 28·4%. Watson reviews some of the relevant literature and gives 34 references. M.McK.

565—Journal of the Fisheries Research Board of Canada.

a. SCOTT, D. M., 1953.—" Experiments with the harbour seal, *Phoca vitulina*, a definitive host of a marine nematode *Porrocaecum decipiens*." **10** (8), 539–547.

(565a) When *Porrocaecum* larvae taken from the flesh of *Gadus callarias*, *Osmerus mordax*, *Hippoglossoides platessoides* and *Macrozoarces americanus* were fed to four worm-free *Phoca vitulina*, the adults recovered proved to be those of *Porrocaecum decipiens*. After moulting between the third and sixth day after infection, the worms had lost their characteristic larval boring tooth and some of the males and females had become sexually mature before the twentieth day. R.T.L.

566—Journal of the Horticultural Association of Japan.

a. SATO, K. & SHICHIJO, T., 1953.—[Growth of young fig trees in old fig orchard soils.] **22** (3), 163–166. [In Japanese: English summary p. 166.]

(566a) Sato & Shichijo grew young fig trees in pots of soil from a fig orchard and in soil from another orchard. The former grew less vigorously than the latter and were infested with nematodes [unidentified]. Water extract of fig roots and of fig orchard soil did not affect

young fig trees growing in sand culture. Chloropicrin fumigation of fig orchard soil resulted in normal growth of the trees. The poor growth of fig trees replanted in old fig orchard soil is considered to be due to nematode injury. M.T.F.

567—Journal of Immunology.

a. VOGEL, H., 1953.—" A serological study of some helminth relations." **70** (6), 503–506.

(567a) Vogel has demonstrated by precipitin tests using anti-*Moniezia expansa* antiserum, anti-*Taenia taeniaeformis* antiserum and anti-*T. pisiformis* antiserum, with *M. expansa*, *T. taeniaeformis* and *T. pisiformis* antigens, that there is a closer serological relationship between species of the same genus than between two genera. He describes his technique in detail and lists the titres obtained. S.W.

568—Journal of the Indian Medical Association.

a. SUBRAMANIAM, R., 1953.—" Sodium fluoride therapy in filariasis." **22** (9), 353–355.
b. KURIAN, P. V., 1953.—" Treatment of ascariasis in children with hetrazan." **22** (12), 488–489.

(568a) Following upon an observation of the late Prof. Pillai of Madras that there was no filariasis in areas where fluorosis was endemic, Subramaniam treated 16 cases with "filarial legs" by weekly subcutaneous injections of 1 c.c. of a 1% solution of sodium fluoride for four weeks. The course was repeated after an interval of one month. The results were uniformly good in reducing filarial legs of moderate size. At this dose rate the drug was non-toxic. R.T.L.

(568b) Kurian finds from a small number of cases of Ascaris infection in children that oil of chenopodium is more efficient than hetrazan but the latter treatment does not require starvation or purgation. For children under 5 years of age hetrazan syrup is particularly suitable whereas oil of chenopodium is not recommended. R.T.L.

569—Journal of Infectious Diseases.

a. KAGAN, I. G., 1953.—" Experimental infections of Rhesus monkeys with *Schistosomatium douthitti* (Cort, 1914)." **93** (2), 200–206.
b. LARSH, Jr., J. E., 1953.—" Studies in old mice to test the hypotheses of local and general immunity to *Trichinella spiralis*." **93** (3), 282–293.

(569a) Sexually mature and young males and females of *Schistosomatium douthitti* were recovered from nine rhesus monkeys (*Macaca mulatta*) 10 to 25 days after experimental exposure to 2,500–45,000 *S. douthitti* cercariae, but five monkeys exposed to 6,000–10,000 cercariae were negative at autopsy 30 to 96 days later. The findings of dead and dying worms 10 to 25 days after exposure suggests that resistance may begin as early as the second week after exposure and the absence of worms after 30 to 96 days indicates that the infection terminated completely in three to four weeks. There was a dermatitis similar to that reported for man but it disappeared in five to seven days. On a second exposure, the dermatitis was less intense, the cercariae did not reach the lungs and the monkeys proved resistant, but they were not protected from an infection with *Schistosoma mansoni* cercariae. The various species of monkeys already reported as susceptible to schistosome infections are tabulated. R.T.L.

(569b) Larsh gives details of his experiments on mice which exclude the operation of a local immunity in Trichinella infections and demonstrates the role of general immunity in old mice. His evidence supports the suggestion that in mice the immunity is due to the primary action of antibodies with secondary cellular co-operation. R.T.L.

570—Journal of the International College of Surgeons.

a. GAMA, C., 1953.—" Compression granuloma of spinal cord caused by *Schistosoma mansoni* ova; epiconus; conus medullaris; cauda equina. Report of a case." **19** (6), 665–674. [French, German, Italian, Spanish & Portuguese summaries pp. 672–674.]

571—Journal of the Japanese Veterinary Medical Association.

a. OISHI, I. ET AL, 1953.—[Therapeutic examination of filariasis. Comparative efficiency study of aromatic-arsenic compound for canine filariasis.] **6** (2), 46–50. [In Japanese.]
b. ONO, Y. ET AL, 1953.—[Prevention for infestation of *Fasciola hepatica*—possible role of agricultural chemicals as the egg-killer.] **6** (10), 353–355. [In Japanese.]
c. TSUHARA, Y. ET AL., 1953.—[Survey of *Schistosoma japonicum* in cattle in Miyaki County, Saga Prefecture.] **6** (11), 418–419. [In Japanese.]
d. KUWABARA, S. ET AL., 1953.—[Anthelmintic test by the agent of 1-brom-2-naphthol.] **6** (12), 436–438. [In Japanese.]
e. KAMOCHI, G., 1953.—['Fog-paralysis', an endemic disease in Japan.] **6** (12), 452–455. [In Japanese.]

572—Journal of the Louisiana State Medical Society.

a. DENT, J. H. & CARRERA, G. M., 1953.—"Eosinophilia in childhood caused by visceral larva migrans." **105** (7), 275–280.

(572a) In children with eosinophilia that cannot be easily explained, migrating larvae of helminths, normally parasitic in other animals, should be suspected. The symptoms and pathogenesis of such infections, particularly *Toxocara canis*, are described on the basis of 13 clinical cases in which liver biopsies and examinations of organs post mortem were made. Such infections are usually found in children of 18 months to six years of age who eat dirt and come into close contact with dogs. The larval lesions are found mainly in the liver and lungs; in one case the brain had been invaded. Other symptoms include retarded development, languor, vomiting, impetigous rashes and psychological disturbances. No treatment is known but recovery may be expected, even in massive infections, if the source of infection is removed. M.MCK.

573—Journal de Médecine de Bordeaux et du Sud-Ouest.

a. DUVIAU, G., 1953.—"Traitement des parasitoses intestinales." **130** (1), 44–51.
b. MERCIER DES ROCHETTES, LHOSMOT, LESCA & SOUCHARD, 1953.—"Un cas de distomatose hépatique." **130** (11), 1278.

(573a) Duviau gives prescriptions and clinical directions for the treatment of tapeworms, Ascaris and Enterobius in adults and children. R.T.L.

574—Journal of the Medical Association of Thailand.

*a. SADUN, E. H., 1953.—"Intestinal helminthic infections in Thailand." **36**, 193.

575—Journal of the Osaka City Medical Center.

a. TAKAHASHI, T., 1953.—[Studies on the experimental hatching of *Ascaris* eggs.] **2** (2), 122–124. [In Japanese: English summary p. 155.]
b. NODA, N., 1953.—[Intradermic reaction of ancylostomiasis.] **2** (3), 202–213. [In Japanese: English summary pp. 241–242.]
c. KIMURA, E. & OHKUBO, M., 1953.—[A new sugar flotation method for separating the eggs of *Ascaris lumbricoides* from the faeces.] **2** (3), 236–238. [In Japanese: English summary p. 244.]

(575a) When about 1,000 eggs of *Ascaris lumbricoides* were fed to mice no hatching occurred in the stomach. Large numbers of embryos were found in the upper part of the small intestine after two hours and in the lower part after nine hours; they were most abundant in the caecum and large intestine after nine hours. None remained in any portion of the bowel after 12 hours. That the gastric juice is not necessary for hatching was proved by injecting the eggs directly into the duodenum after the upper end of the small intestine and the lower end of the large intestine had been tied firmly. In the upper portion of the small intestine embryos were very abundant after one hour, in the middle portion after four hours and in the caecum and large intestine after nine hours. R.T.L.

(575b) When 0·2 c.c. of an extract of encysted larvae of *Ancylostoma duodenale* "prepared by the method of Matsubara's cancer reaction" was injected into the flexor of the forearm of 115 hookworm patients and 117 normal individuals, 81·7% of the patients showed positive results. The highest positive rate was observed after 30 minutes. The redness was over 30 mm. broad in most of the patients and less than 20 mm. in the controls. The degree was unaffected by the number of ova and adult worms present. The test was positive in patients examined over one year after anthelmintic treatment. R.T.L.

(575c) *Ascaris lumbricoides* ova are completely separated when a lump of fresh faeces about 2 gm. in weight is crushed in 5 c.c. of a saturated sugar-cane solution of specific gravity 1·25, filtered through gauze and poured into a centrifuge tube. On to this are gently and successively pipetted two layers of sugar solutions of specific gravities of 1·15 and 1·12. Lastly a top layer of distilled water is added. The tube is centrifuged at 3,000–4,000 r.p.m. for 15 to 20 minutes. Nearly all the ova collect in a thin stratum between the second and third layers. The heavier particles of faeces sink to the bottom and the lighter particles float between the distilled water and the sugar solution. The stratum containing the ova is pipetted off and centrifuged in distilled water at 3,000 r.p.m. for about 10 minutes. The ova sink to the bottom and can be obtained in a pure state by decanting the supernatant fluid. R.T.L.

576—Journal of Pediatrics.

a. KEAN, B. H., 1953.—" The treatment of enterobiasis (oxyuriasis). The need for a special sleeping garment." **43** (1), 47–53.
b. CHAN, K. F. & BROWN, H. W., 1953.—" The treatment of pinworm (*Enterobius vermicularis*) infection with bacitracin and sulfasuxidine." **43** (3), 290–293.

(576b) The tabulated results of the administration to Enterobius cases of 120,000 units of bacitracin and 6 gm. of sulphasuxidine daily in four doses show that the rate of cure was 77% when the treatment was given for five days and 91% when given for seven days. The use of these drugs will be greatly restricted by the cost of the relatively large amounts required. R.T.L.

577—Journal of the Royal Army Medical Corps.

a. COWAN, N. M., 1953.—" A case of urinary bilharziasis caused by *S. mansoni* and *S. haematobium* with no intestinal involvement." **99** (4), 185–186.

(577a) Double vesical infection with *Schistosoma haematobium* and *S. mansoni* is very rare. This case, the first to be reported from East Africa, occurred in a native of Dar-es-Salaam, Tanganyika. R.T.L.

578—Journal of the Society for British Entomology.

a. COOKE, J. A. L., 1953.—" Notes on the nematode parasites of spiders." **4** (8), 188.

(578a) Two new instances are recorded of nematodes in spiders in Britain: a young *Mermis* sp. in an immature female *Zelotes latreillei* and a young *Mermis* sp. in *Xysticus cristatus*. M.MCK.

579—Journal of the Tennessee Academy of Science.

a. EDNEY, J. M. & KELLEY, Jr., G. W., 1953.—" Some studies on *Galumna virginiensis* and *Moniezia expansa* (Acarina, Oribatoidea; Cestoda: Anoplocephalidae)." **28** (4), 287–296.
b. JONES, A. W. & MAYER, T. C., 1953.—" The chromosomes of *Spirorchis magnitestis* Byrd (Trematoda, Digenea)." **28** (4), 301–304.

(579a) A method of storing the oribatid mite (*Galumna virginiensis*) which is used in laboratory studies on the life-history of *Moniezia expansa*, and the histological changes in the onchosphere after it has reached the body-cavity in the mite are described. The scolex was completely formed and the cysticercoid had reached the infective stage in 55 days. 9·5% of the 420 individual mites experimentally exposed to infection contained cysticercoids, with

an average of 1·4 per mite. Experimentally infected lambs developed diarrhoea whereas the controls did not. No correlation could be found between the number of *G. virginiensis* on a field plot and the prevailing weather conditions. It was estimated that there was a surface population of about two million mites per acre in the Kentucky pasture sampled. R.T.L.

(579b) In the chromosomes of *Spirorchis magnitestis* there are one pair of metacentrics, three pairs of long acrocentrics, one pair of medium acrocentrics and four pairs of small acrocentrics. At mitotic metaphase in the spermatogonia, the longest chromosomes are about 5 μ–6 μ and the shortest about 1 μ in length. At prometaphase, the chromosomes are somewhat longer with distinct centromeres. Spermatogenesis involves three, rarely four, spermatogonial divisions. These divide into eight primary spermatocytes which undergo meiosis. Chiasmata at diplotene or diakinesis showed that at least one chiasma is formed by each pair; there is never more than one chiasma per bivalent in the shorter chromosomes; up to four may form in the longer chromosomes, but there are usually two. In the metacentric chromosome, the chiasmata are invariably two. Pachytene chromosomes of the oocyte show chromomeric banding which on further study may serve to identify specific chromosomes or regions. R.T.L.

580—Journal of Tropical Medicine and Hygiene.

a. SCHNEIDER, J., 1953.—"Preliminary study of the incidence of intestinal schistosomiasis amongst the non-white races of Natal, Union of South Africa." **56** (11), 251–255.
b. STRANSKY, E. & PESIGAN, N. E., 1953.—"Liver changes in schistosomiasis in children. (Preliminary report.)" **56** (11), 261–266.

(580a) Rectal biopsy of 261 persons of African, Indian and coloured origin, from many different parts of Natal, revealed schistosome eggs in 68 instances although none had been found by examination of the faeces. 32 of the cases showed *Schistosoma mansoni* eggs and in one case eggs of *S. haematobium* were found: in 54 the eggs were non-viable. The 13 cases with viable *S. mansoni* eggs came from the Durban area and had contracted the infection in rivers or streams in the area. The majority of the cases with non-viable eggs had never received treatment and some showed intense infections. R.T.L.

(580b) A study of the histology of material obtained from seven children with schistosomiasis japonica and malnutrition indicated that the fibrosis seen in advanced cases was not mainly a tissue reaction to the eggs but was due to the steatosis which constantly followed malnutrition. R.T.L.

581—Journal of the Washington Academy of Sciences.

a. MASSEY, Jr., L. M. & NEAL, A. L., 1953.—"Investigations concerning the hatching factor of the golden nematode of potatoes, *Heterodera rostochiensis* Wollenweber." **43** (12), 396–401.

(581a) Massey & Neal have concentrated the hatching factor (for potato-root eelworm) from tomato-plant leachings by freeze-drying at high vacuum, extracting the residue with ethanol, and removing inactive precipitates which either were formed during concentration or were thrown down by adding diethyl ether. The water-soluble concentrate resulting was then dried, redissolved and subjected to paper chromatography, using various solvents for development. Using 80% aqueous phenol the Rf (relative front) value was 0·84. Activity on dry chromatograms was rapidly lost in air at room temperatures. In the pure state the factor was ether-insoluble. Active material was also obtained from illuminated discs cut from tomato leaves, and from homogenized root tissue. B.G.P.

582—Journal of the Zoological Society of India.

a. RAMALINGAM, K., 1953.—"A new genus of trematode (*Chauhanea*) from the gills of *Sphyraena acutipinnis* Day." **5** (1), 59–63.

(582a) Ramalingam describes and illustrates *Chauhanea madrasensis* n.g., n.sp. from the gills of *Sphyraena acutipinnis*. The new genus is distinguished from other members of the

Gastrocotylinae by the possession of an asymmetrical haptor which has both sides developed as frills bearing typical gastrocotylid clamps, without rib-like thickenings or plaques, and which is borne on a distinct stem, by the presence of testicular follicles in front of, beside and behind the ovary, and by the presence of a lateral armed vagina and an unarmed genital pore. A key to the genera of the Gastrocotylinae is provided. S.W.

583—Kartoffelwirtschaft.

a. DREES, H., 1953.—" Massnahmen gegen Kartoffelnematoden." **6** (41), 455.

(583a) Drees gives a short explanation of the organization which has been set up in Germany to supervise the granting of certificates of freedom from potato-root eelworm required by importers of products such as potatoes and bulbs. A special institute of the plant protection service has been set up for consultation and the agricultural ministry gives help with investigations. By co-operation between officials and agriculture everything is done to satisfy as far as possible the requirements of importers for freedom of agricultural products from nematodes. M.T.F.

584—Kyushu Agricultural Research.

a. TANAKA, I., 1953.—[Some observations on the horizontal behaviour of the root-knot nematodes.] No. 11, pp. 47–48. [In Japanese.]
b. FUKANO, H., YOKOYAMA, S. & NISHIZAWA, T., 1953.—[The effect of Folidol for the control of white-tip of rice plant.] No. 11, pp. 75–77. [In Japanese.]
c. TANAKA, I. & FURUDONO, S., 1953.—[The verticular distribution of soil nematode in tobacco fields of Kyushu.] No. 12, pp. 104–106. [In Japanese.]

585—Lantbruksveckan.

a. ÅKERBERG, E., 1953.—" Förädlingsarbeten vid Utsädesföreningens Ultunafilial och därvid uppnådda resultat." Year 1953, pp. 190–212.

(585a) Breeding for resistance to stem nematode in red clover is mentioned. Two strains, U 036 and U 056, selected at the Ultuna Branch Station of the Swedish Seed Association, have given good results on nematode-infested land. S.B.

586—Leaflet. Department of Agriculture, Eire.

a. ANON., 1953.—" Potato root eelworm." No. 124, 3 pp.

587—Lunds Universitets Årsskrift.

a. WEISER, W., 1953.—" Reports of the Lund University Chile Expedition 1948–1949. 10. Free-living nematodes. I. Enoploidea." N.F.avd. 2, **49** (6), 155 pp.
b. GERLACH, S. A., 1953.—" Reports of the Lund University Chile Expedition 1948–1949. 12. Freilebende marine Nematoden aus dem Küstengrundwasser und aus dem Brackwasser der chilenischen Küste." N.F.avd. 2, **49** (10), 37 pp. [Spanish summary p. 36.]

(587a) This monograph gives a systematic account of the enoploid nematodes collected by Brattström & Dahl on the Chilean coast. The Chilean nematode fauna contains only a very small percentage of species known in Europe. In Weiser's opinion this confirms the untenability of Steiner's view that the marine nematodes are cosmopolitan. There are seven new genera, two new subgenera and 55 new species. The new genera belong to (i) Enoplidae viz., *Parasaveljevia lupata* n.g., n.sp., *Epacanthion microdentatus* n.g., n.sp., *Paramesacanthion inaequalis* n.g., n.sp., *Mesacanthoides sculptilis* n.g., n.sp., *Metenoploides alatus* n.g., n.sp.; (ii) Oncholaimidae, viz., *Curvolaimus decipiens* n.g., n.sp. and *Metoncholaimoides squalus* n.g., n.sp. The new subgenera are *Halalaimus* (*Pachyodora*) *climactericus* n.subg., n.sp. and *Phanoderma* (*Alyncoides*) *pacificum* n.subg., n.sp. Of the remaining new species, five belong to Leptosomatidae, six to Oxystomatidae, three to Phanodermatidae, fifteen to Enoplidae, two to Dorylaimidae, ten to Oncholaimidae and five to Enchelidiidae. There are about 80 new synonyms, new combinations and changes of rank. R.T.L.

(587b) Gerlach describes a number of free-living marine nematodes from the Chilean coast including *Dolicholaimus acutus* n.sp., *Steineria parapolychaeta* n.sp., *Ethmolaimus dahli* n.sp., *Paracyatholaimus chilensis* n.sp., *Neochromadora complexa* n.sp., *Theristus diversispiculum* n.sp. and *T. clavicaudatus* n.sp. R.T.L.

588—Lyon Médical.

a. ROMAN, E., BARDET, P. & BERTHIER, J., 1953.—" Une sangsue vivante dans l'ampoule rectale d'une nonagénaire." **189** (37), 170 172.

589—M.S.C. Veterinarian. Michigan State College.

a. KELLER, W. F., 1953.—" Ancylostomiasis and distemper in golden retriever pups." **14** (1), 32–33.

(589a) The failure of a distemper vaccine to immunize three puppies is attributed to massive infections of *Ancylostoma caninum*. Keller stresses that an animal must be in excellent health if good results are to be obtained. M.McK.

590—Madjalah Kedokteran Indonesia.

a. SRI UMIJATI, N. & LIE KIAN JOE, 1953.—" Beberapa parasit jang terdapat pada binatang dan jang ditemukan pada manusia di Indonesia. II. Cestoda." **3** (3), 87–92. [English summary p. 92.]
b. KWO EH HOA & LIE KIAN JOE, 1953.—" Beberapa parasit jang terdapat pada binatang dan jang ditemukan pada manusia di Indonesia. III. Trematoda." **3** (4), 131–136. [English summary p. 136.]
c. TAN KOK SIANG & LIE KIAN JOE, 1953.—" Beberapa parasit jang terdapat pada binatang dan jang ditemukan pada manusia di Indonesia. IV. Nematoda." **3** (12), 487–493. [English summary p. 493.]

(590a) The following cestodes of animals have been occasionally reported as parasites in man in Indonesia: *Bertiella studeri* (twice), *Dipylidium caninum* (twice), *Raillietina madagascariensis* (once), *Cysticercus* (once) and *Sparganum* (thrice). R.T.L.

(590b) The recorded trematodes of animals which have occasionally been found in man in Indonesia are *Haplorchis yokogawai*, *Echinostoma ilocanum*, *E. recurvatum*, *E. malayanum* and *E. lindoensis*, *Paralecithodendrium molenkampi* and *Phaneropsolus bonnei*. R.T.L.

(590c) The nematode parasites of animals which have been recorded as occasionally present in man in Indonesia are *Ancylostoma caninum*, *A. braziliense*, *Trichostrongylus colubriformis*, *T. axei*, *Oesophagostomum apiostomum* and *Gnathostoma spinigerum*. R.T.L.

591—Maroc Médical.

a. GARIPUY, A., DASTE, B., COUZI, G. & MALLARET, P., 1953.—" Distomatose duodénale à *Fasciola hepatica*." **32** (337), 614–616. [Discussion p. 616.]
b. MASSEBOEUF, A., OGER, MAS & ACQUAVIVA, 1953.—" Kyste hydatique profond de l'orbite. Exérèse par orbitomie latérale (voie temporale)." **32** (337), 622–624.
c. IMBERT, MEUNIER, TABY & HETRICK, 1953.—" Les indications de l'exérèse dans l'échinococco-tuberculose pulmonaire." **32** (341), 1049–1050.
d. IMBERT, MEUNIER, TABY & HETRICK, 1953.—" Difficultés de diagnostic entre kyste hydatique et tuberculose pulmonaire en milieu marocain." **32** (341), 1051.
e. LEVI-VALENSI, A. & ZAFFRAN, A., 1953.—" Volumineux kyste hydatique du poumon chez une cardiaque—extraction par broncho-aspiration." **32** (341), 1052–1053.
f. MIMOUNI, J., 1953.—" Guérison de cinq kystes hydatiques du poumon par broncho-aspiration. Contribution de méthodes adjuvantes: varidase, trypsine, papaïne, ultra-sons." **32** (341), 1054–1056.
g. BELOT, P., 1953.—" Possibilités de prophylaxie de l'hydatidose." **32** (343), 1377–1379.

(591a) A case of human infection with *Fasciola hepatica* is reported from French Morocco. X-ray revealed that the flukes were located in the duodenum and *F. hepatica* eggs were recovered by duodenal tubation. The introduction of a 33% solution of magnesium sulphate brought about the expulsion of the worms. R.T.L.

592—Médecine Tropicale.

a. GAUD, J., 1953.—" Notice épidémiologique sur les bilharzioses." **13** (3), 320–327.
b. RAYNAL, J., 1953.—" Sur les schistosomes Africains." **13** (5), 703–715.

(592a) Gaud broadly reviews the problems of schistosomiasis and its control and lists he observations which should be made during a survey of the snail intermediaries. The paper concludes with a key to the known African vectors and notes on the collection and transport of egg masses, and living and fixed snails. S.W.

(592b) Raynal gives a brief general account of *Schistosoma haematobium*, *S. mansoni* and *S. intercalatum* parasitic in man and of *S. bovis*, *S. mattheei*, *S. rodhaini*, *S. mansoni* var. *odentorum* and *S. margrebowiei* parasitic in animals in Africa. He discusses their distribution and gives a comprehensive bibliography. S.W.

593—Mededelingen van de Landbouwhogeschool en de Opzoekingsstations van de Staat te Gent.

a. OOSTENBRINK, M. & BESEMER, A. F. H., 1953.—" Parasitaire aaltjes als een oorzaak van 'wortelrot' in de snijbloemencultuur en hun bestrijding met grondontsmettingsmiddelen." **18** (2), 335–349. [English summary p. 343.]
b. BRANDE, J. VAN DEN, KIPS, R. H. & D'HERDE, J., 1953.—" Scheikundige bestrijding van het aardappelcystenaaltje *Heterodera rostochiensis* Woll." **18** (2), 350–366. [English, French & German summaries pp. 364–366.]
c. MONTAGNE, J. T. W., 1953.—" Enige aspecten betreffende het gebruik van DD ter bestrijding van cysten-vormende aaltjes." **18** (2), 367–373. [English & German summaries pp. 372–373.]

(593a) Oostenbrink & Besemer found that a root rot of certain plants grown for cut flowers (e.g. *Pyrethrum*, *Centaurea*, *Chrysanthemum*) was associated with the presence of *Pratylenchus* sp., *Hoplolaimus uniformis* and sometimes *Meloidogyne* sp. Populations of *Hoplolaimus* might reach high levels. Inoculation of plants grown in sterile soil with suspensions of *H. uniformis* and *Pratylenchus* produced typical symptoms. Soil fumigations with chloropicrin or D-D mixture at 50–70 c.c. per sq. m. killed about 95% of the nematodes and enabled a good crop to be grown. Ethylene dibromide was less reliable. Saprozoic nematodes were more resistant than parasites. The authors conclude that fumigation of sick fields with D-D may give a threefold to fivefold return. M.T.F.

(593b) The authors have tested a number of chemicals with cysts of the potato root eelworm both by fumigation and by direct contact, investigating also the influence on toxicity of temperature, humidity and time of exposure. No larvae hatched from cysts which had been fumigated with D-D mixture, chlorobromopropene, ethylene dibromide and chloropicrin. Fumigation with Pestox was a little more effective than with Systox, while Isopestox was quite inactive; all were less effective than the standard nematicides. The results of direct contact experiments were similar. Temperature appeared to have a marked effect on efficacy except with D-D. Humidity of the cysts largely determined the efficacy of the chemicals tested. A field trial of Pestox and Systox used as a soil drench and as a foliage spray showed them to be worthless for the control of potato root eelworms. M.T.F.

(593c) Montagne considers the factors influencing soil fumigation for the control of cyst-forming nematodes, and points out the differences in interpretations placed on the results of D-D mixture fumigation. The optimum conditions for the distribution of D-D in the soil and the most sensitive period for the nematode should be considered as well as temperature, humidity and season. In practice the most useful results appear to be obtained when D-D fumigation is combined with a short crop rotation. Summer or early autumn is the best time for fumigation and costs of treatment can be reduced by using simple injectors. M.T.F.

594—Medical Bulletin. Standard Oil Company (New Jersey).

a. PATIÑO-CAMARGO, L., 1953.—" Sintesis sobre parasitismo intestinal." **13** (3), 342–351.

(594a) Patiño-Camargo summarizes the literature published since 1940 on the incidence of parasites of man in Colombia. P.M.B.

595—Medical Journal of Australia.

a. FRIEND, K. J. & LENNON, E. A., 1953.—" Hydatid disease at Royal Hobart Hospital." 40th Year, **1** (22), 772–774.
b. GRAHAM, H. B., 1953.—" The fruits of Lister's labours: illustrated by an account of the surgery of hydatid cysts." 40th Year, **1** (25), 869–874.
c. SANDARS, D. F., 1953.—" Another record of a human diphyllobothriid in Australia." 40th Year, **2** (2), 55–58.
d. FLYNN, R. & FLYNN, L., 1953.—" Ruptured hydatid cyst of the liver, with a fistula between the hepatic duct and the cyst." 40th Year, **2** (13), 497.
e. HARBISON, V. R., 1953.—" An interesting case of hydatid disease." 40th Year, **2** (23), 858.

(595c) Sandars describes and illustrates a tapeworm of the *Diphyllobothrium latum* group which was obtained by atebrin treatment from an Estonian woman who had immigrated to Queensland from Europe four years previously. Attempts to infect local Cyclops were unsuccessful. R.T.L.

596—Medical Journal of Malaya.

a. HARRISON, J. L., 1953.—" Leeches." **8** (2), 180–185.

(596a) The Malayan leeches which are of medical or veterinary importance are *Hirudinaria manillensis* which lives solely in water and *Haemadipsa* spp. which live on the ground or on the leaves of trees. Information is sought on their detailed distribution and relative importance of which very little is known. R.T.L.

597—Medicamenta. Madrid.

a. REY BUSTO, M., 1953.—" Tratamiento de la enterobiasis con terramicina." **11** (230), 78–79.

(597a) Two ten-day courses of terramycin hydrochloride at the rate of 250 mg. every six hours, supplemented by vitamin B, with an interval of ten days between the two courses, were found effective in the treatment of enterobiasis in adults. For children doses of 50 mg. were given as above. Patients were kept under strict observation. [No details of the number of cases treated are given.] P.M.B.

598—Medicina, Cirurgia, Farmácia. Rio de Janiero.

a. CARDOSO, W., 1953.—" A esquistossomíase mansônica no negro." No. 202/203, pp. 89–95.

(598a) To compare the resistance of negro and white people to schistosomiasis at Itaporanga d'Ajuda, Brazil, the records of 4,272 individuals, of whom 2,192 were white and 2,080 were negro were examined; 82·1% of the whites and 75·9% of the negroes were positive. Four hundred cases (200 white and 200 negro) were examined from a clinical point of view and were divided into four categories, namely, (i) asymptomatic, (ii) cases with intestinal symptoms and enlarged liver, (iii) those with enlarged liver and palpable spleen and (iv) those with enlarged liver and spleen, haematemesis or ascites and evidence of collateral circulation. 34% of the negroes and 13% of the whites were in the first category, 45% of the negroes and 42% of the whites in the second, 20% of the negroes and 34·5% of the whites in the third, and 1% of the negroes and 10·5% of the whites in the fourth. Both negroes and whites lived under similar conditions. Cardoso concludes that in negroes there is a greater resistance than in white people, that subclinical, asymptomatic forms are more common and that clinical forms are less severe. He suggests that these facts may be explained by (i) the greater thickness

nd higher *p*H content of the negro skin and the greater interference of reticuloendothelial ements, (ii) the relative immunity acquired through long association with the infection, r (iii) by a combination of both. P.M.B.

99—Medizinische. Stuttgart.

a. SCHEID, G. & MENDHEIM, H., 1953.—" Über die Verwendung von proteolytischen Fermenten in der Behandlung von Nematoden-Infektionen." Year 1953, No. 7, pp. 225–227.
b. SEITZ, K., 1953.—" Über Zusammenhänge Zwischen Askaridiasis und Bodenbeschaffenheit." Year 1953, No. 9, pp. 287–288.
c. WEISE, H., 1953.—" Über die Verwendung von proteolytischen Fermenten in der Behandlung von Nematoden-Infektionen." Year 1953, No. 16, p. 554.
d. WIGAND, R., 1953.—" Bandwurmkuren (betreffend *Taenia solium*, *Taenia saginata*, *Diphyllobothrium latum*, *Dipylidium caninum* und *Hymenolepis nana*)." Year 1953, No. 35, pp. 1091–1096.

(599a) Scheid & Mendheim report that 34 out of 40 cases of ascariasis treated with Nematolyt powder (10 gm. for children and 20 gm. for adults) were cured after a single dose; ive others were cured after a second dose. Of four adults with Trichuris infection two were ured after a single dose of 10 gm. followed by an enema containing 15 gm. Nematolyt powder n warm water. A.E.F.

(599b) Seitz has carried out experiments to determine the relationship between Ascaris nfection and the nature of the soil. He reports that in light and porous soils Ascaris ova re greatly reduced in number after three months and after six months only occasional ova are o be found near the surface. On the other hand, in heavy soils ova find optimal conditions or survival. A.E.F.

(599c) In this brief note Weise confirms that a dose of 4 gm. Vermizym (a proteolytic nzyme) is sufficient for the treatment of nematode infections. A.E.F.

(599d) Wigand lays down general principles for the treatment of human cestode infections but points out that the remedies available "do not exactly possess a high degree of eliability". After discussing the value of male fern extract, pumpkin seeds, carbon tetrachloride, tetrachlorethylene, Carlsbad salt, hexylresorcinol, atebrin, benzine and tin (in the orm of Cestodin), he seems to think that the two last are the most promising. Treatment hould invariably be carried out in hospital. Much more attention should be paid to prophyaxis. A.E.F.

600—Medizinische Klinik.

a. BAUER, K. M., 1953.—" Zur Bilharziose des Urogenitaltraktes." **48** (19), 666–668.
b. KESSLER, P. N., 1953.—" Beitrag zur fermentativen Wurmbehandlung. I. Mitteilung." **48** (20), 710–711.
c. KUHLS, R., 1953.—" Zinn in der Bandwurmtherapie." **48** (41), 1511–1514.

(600a) Bauer presents a general account of schistosomiasis haematobia, dealing with ymptoms, treatment and differential diagnosis. A.E.F.

(600b) Kessler reports that 27 of 30 cases of Ascaris infection treated with Nematolyt ere cured. In ancylostomiasis and strongyloidiasis no success was obtained with this drug; urther attempts with higher dosages are to be reported on in a later paper. A.E.F.

(600c) Kuhls has treated a series of 202 cases of cestode infections (197 *Taenia saginata*, hree *T. solium* and two *Diphyllobothrium latum*) with Cestodin tablets, a preparation conaining tin, tin oxide and tin chloride. The dosage was one tablet three times a day for five ays. All patients were kept under observation up till three years after treatment: 180 were ured and remained free from infection, 16 relapsed and six had fresh infections. The treatent was well tolerated and there are no contra-indications. Cestodin is particularly suited o the treatment of children. A.E.F.

601—Medizinische Monatsschrift. Stuttgart.

a. AMMON, R. & DEBUSMANN-MORGENROTH, M., 1953.—" Beitrag zur Frage: Werden Nematodeneier von aktiviertem Papain angegriffen." **7** (11), 705–708.

(601a) Ammon & Debusmann-Morgenroth report that the ova of *Enterobius vermicularis*, *Ascaris lumbricoides* and *Trichuris trichiura* are attacked neither by Nematolyt nor by Vermizym the two proteolytic enzyme preparations used as anthelmintics. A.E.Fl

602—Medycyna Weterynaryjna.

a. CHILIMONIUK, J. & PINKIEWICZ, E., 1953.—" Obserwacje nad skutecznością działania fioletu goryczki przy Strongyloidesiasis u prosiąt." **9** (10), 455–456.
b. LACHOWICZ, S., 1953.—" Przypadek wyleczenia kołowacizny u owcy." **9** (12), 554.

(602a) Chilimoniuk & Pinkiewicz discuss the occurrence of strongyloidiasis among 43 pigs aged from one to four months. In nearly all of them there were nervous symptoms of varying degrees and four of the pigs died. Gentian violet in a dose of 0·5 gm. in 300 c.c. of water gave excellent results. C.R.

(602b) Lachowicz describes the clinical symptoms and surgical treatment of *Coenurus cerebralis* in three sheep. Trephining in one case did not reveal the cyst, which was only located at autopsy. In the second case the cyst was evacuated but the sheep died. In the third case the cyst was found on the same side as the slimy flow from one nostril and was also evacuated. The recovery of this sheep is attributed to the fact that an opening was left which enabled pus to discharge. G.I.P.

603—Mémoires de la Société Neuchâteloise des Sciences Naturelles.

a. DUBOIS, G., 1953.—" Systématique des Strigeida. Complément de la monographie." **8** (2), 141 pp.

(603a) Since the publication in 1938 of Dubois' "Monographie des Strigeida (Trematoda)", over a hundred new species have been added to the literature. This has necessitated a revision of the keys and diagnoses formerly given, a new host list containing many additions, an alphabetical list of sub-families, genera and subgenera which Dubois considers to be synonyms, and a supplementary list of references. R.T.L.

604—Memoirs of the Faculty of Agriculture, Hokkaido University.

a. YAMASHITA, J., 1953.—[Studies on the daily fluctuation of the egg production of the rat trematode, *Plagiorchis muris* (Tanabe). I. On a case in the white mouse supplied with the crashed-rice or oat.] **1** (3), 305–308. [In Japanese: English summary p. 308.]
b. WAKAZONO, T., 1953.—[Some parasites in the intestine of a seal, *Phoca vitulina* Linnaeus, 1758.] **1** (3), 312–314. [In Japanese: English summary p. 314.]
c. MORI, H., 1953.—[Studies on the development of ascaris larvae, *Ascaris lumbricoides*, within the body of immune white mice and the formation of large granular substances of ascaris larvae in immune mouse serum.] **1** (4), 490–498. [In Japanese: English summary p. 498.]
d. YAMASHITA, J. & MORI, H., 1953.—[On some species of the endoparasites of bats, *Nyctalus maximus aviator* Thomas.] **1** (4), 499–503. [In Japanese: English summary p. 503.]
e. YAMASHITA, J. & YAMASHITA, Z., 1953.—[On the occurrence of *Contracaecum microcephalum* (Rud.) Baylis in the proventriculus of cormorants, *Phalacrocorax capillatus* (Temm. et Schleg.).] **1** (4), 504–508. [In Japanese: English summary pp. 507–508.]
f. YAMASHITA, J., FUJIMOTO, Y. & OHBAYASHI, M., 1953.—[On three species of parasites collected from the intestine of a reticulated python.] **1** (4), 509–512. [In Japanese: English summary p. 512.]
g. YAMASHITA, J., MORI, H. & KOBAYASHI, T., 1953.—[Epidemiologic survey of parasites of domestic animals in Hokkaido. II. A survey of the horses within the jurisdiction of Kitami City.] **1** (4), 513–521. [In Japanese: English summary pp. 520–521.]

(604a) Egg counts made on the faeces of white mice fed on midge larvae experimentally infected with metacercariae of *Plagiorchis muris* revealed a daily fluctuation with a wave crest of about one week. The number of eggs laid per fluke per day averaged about 200. R.T.L.

(604b) In a seal, *Phoca vitulina*, captured on the shore of Rumoe, Hokkaido, there were five specimens of *Ascaris capsularia* in the intestine. Other helminths present were 44 *Echinostoma* sp., two *Corynosoma strumosum* and one unidentified cestode. R.T.L.

(604c) In mice experimentally infected with *Ascaris lumbricoides* ova the number of larvae arriving in the liver reaches its maximum four days after infection and in the lung six days after infection. Repeated reinfections induced a remarkable resistance to the migrating larvae. After five infections the number of larvae recovered from the liver was 4·2% and from the lung 1·3% as compared with 28·4% and 22·1% respectively in the controls. When placed in the serum of mice infected ten times, large granular substances accumulated in the mouth, excretory pore and especially in the intestine. These results suggest that the mice develop resistance against Ascaris larvae. R.T.L.

(604d) The helminths collected from the bat *Nyctalus maximus aviator* caught in Sapporo, Japan, were *Capillaria pipistrelli*, *Plagiorchis muris*, *Mesodendrium macrostomum*, *Hymenolepis bacillaris* and *Molinostrongylus skrjabini longispicula* n.subsp. which closely resembles *M. skrjabini* but differs markedly in the length of the spicules. The previously unknown male of *C. pipistrelli* measures 9·2 mm. to 11·5 mm. in length. The cuticular striations are only visible under high magnification. No bacillary bands were observed. There is a short bursal lobe at the tail end supported on each side by a rod-shaped process and two smaller processes. The slightly pointed spicule is 1·4 mm. to 1·9 mm. long and the spicular sheath is very long. One abnormal specimen of *P. muris* had a very short intestine on the right side. R.T.L.

(604e) In specimens of *Phalacrocorax capillatus* used for fishing in the River Nagara, Gifu Prefecture, Japan, many *Contracaecum microcephalum* were attached to the mucosa of the proventriculus and were associated with nodules and ulcer formation. Similar nodules occurred in the muscular layer and in the kidney, lung and subcutaneous tissue of the cervical region. R.T.L.

(604f) Numerous species of *Polydelphis oculata*, *Capillaria longispicula* and *Bothridium pythonis* were found in a *Python reticulatus* imported into Japan from Burma. R.T.L.

(604g) The faeces of 2,214 horses in the region within the jurisdiction of the City of Kitami, Japan showed an infection rate of *Strongylus* sp. 77·3%, *Trichonema* sp. 9·2%, *Parascaris equorum* 18·2%, *Anoplocephala magna* 0·4% and *A. perfoliata* 0·09%. The horses with *Anoplocephala* infections came only from the northern part of the region. The infection rate of *Parascaris* was highest in the one-year-old colts and was much higher than in adult horses even in the same stable. *Strongylus* sp. ova were present in the faeces of more than ten colts even at the age of 3½ to 4 months. R.T.L.

605—Memorias do Instituto Butantan.

a. RUIZ, J. M., 1953.—"Preparo do antígeno para intradermo-reação na esquistossomose." **25** (1), 5–13. [English summary p. 12.]

b. RUIZ, J. M., 1953.—"Esquistossomose experimental. 3. *Cuniculus pacca pacca* e *Grison furax*, novos animais receptíveis à infestação pelo *Schistosoma mansoni*." **25** (1), 23–26. [English summary p .26.]

c. RUIZ, J. M. & CARVALHO, J. M. A., 1953.—"*Australorbis immunis* (Lutz, 1918) hospedeiro intermediário de *Schistosoma mansoni* na cidade de Santos, Estado de São Paulo." **25** (1), 175–176.

d. RUIZ, J. M., 1953.—"Esquistossomose experimental. 4. *Nasua narica* e *Didelphis paraguayensis*, animais sensíveis à infestação experimental pelo *Schistosoma mansoni*." **25** (2), 23–27. [English summary pp. 26–27.]

e. RUIZ, J. M., 1953.—"Processo rápido de perfusão do sistema porta de mamíferos para coleta de esquistossomatídeos, aplicavel aos trabalhos de campo." **25** (2), 29–33. [English summary p. 31.]

f. RUIZ, J. M., 1953.—"Contribuição ao conhecimento das formas larvárias de trematóides brasileiros. 4. Nota sobre o sistema excretor da cercária de *Schistosoma mansoni*." **25** (2), 45–53. [English summary p. 50.]

g. RUIZ, J. M., 1953.—" Contribuição ao estudo das formas larvárias de trematóides brasileiros 5. Descrição de três furcocercárias que ocorrem em planorbídeos hospedeiros do *Schistosoma mansoni*." **25** (2), 77–89. [English summary p. 85.]

(605a) Ruiz describes a new method of preparing schistosome antigen. For every ml. of final antigen about 100 worms of either sex were treated with a mixture of equal parts of absolute alcohol and sulphuric ether for 4–24 hours, drained, dried in vacuo, finely powdered in a sterile centrifuge tube, treated with 10 ml. to 15 ml. of alcohol ether, thoroughly shaken and left for 1–2 hours, drained and redried for 10–15 minutes in vacuo. Coca's merthiolated solution was then used as an extracting fluid. After rapid centrifuging for 20 minutes the supernatant fluid was put in sterile ampoules or flasks. When tested on 89 human cases the results agreed entirely with those obtained using Meyer & Pifano's antigen but showed slightly greater sensitivity and specificity. M.MCK.

(605b) *Cuniculus paca paca* and *Grison furax* were successfully infected with *Schistosoma mansoni*. Viable eggs were passed in the faeces in about 57 days and adult males and females were recovered at post-mortem. The animals gained weight, improved in condition and passed schistosome eggs regularly. M.MCK.

(605c) Ruiz & Carvalho identified only *Australorbis glabratus* and not *A. immunis* among planorbids from Belo Horizonte. They found only two *Australorbis* species at Santos, *A. immunis* being the more common and carrying *Schistosoma mansoni*, and *A. bahiensis* of Baker (=*Planorbis nigricans* of Lutz). The latter species was abundant at São Paulo City but was not infected. M.MCK.

(605d) Of five *Didelphis paraguayensis* experimentally infected with *Schistosoma mansoni*, one was negative to faecal examinations up to the time of writing (approximately six months) and the remaining four were autopsied. One showed no infection, one revealed 16 male and two female *S. mansoni* and two presented all-male infections. One *Nasua narica*, similarly infected, eliminated eggs after the 54th day. M.MCK.

(605e) In a modification of his perfusion equipment for the recovery of schistosomes from experimentally infected animals, Ruiz has substituted for the two 5-litre jars (which contained sodium chloride and sodium citrate solutions and which were placed 1·2 metres above the rest of the apparatus) a 500 ml. to 1,000 ml. flask connected to a rubber compression bulb. This change shortens considerably the time formerly required. [For abstract of previous paper see Helm. Abs., **21**, No. 740a.] M.MCK.

(605f) Cercariae obtained from *Australorbis glabratus* in the State of Minas Gerais, Brazil, were identified as *Schistosoma mansoni* by the recovery of adult males from guinea-pigs experimentally exposed to the cercariae. Ruiz found that in the unstained living cercariae the ciliated areas in the excretory vessels could be seen but that they were visible only in compressed specimens approaching death. Although classically held to lie on the two main lateral excretory canals they were found on the main collecting vessel of each side near the location of the U-bend, i.e. near the junction of the two main collecting vessels. The flame cell formula was $2[2+2(+1)]=8(+2)$ in 17 and $2[2+1(+1)]=6(+2)$ in 8 of the 25 cercariae examined. M.MCK.

(605g) Ruiz has found three kinds of furcocercous cercariae in planorbid hosts of *Schistosoma mansoni* in Brazil. *Cercaria caratinguensis* n.sp. was collected from *Australorbis glabratus* at Caratinga, Minas Gerais; five pairs of caudal cells distinguish it from *C. pseudoburti* which has seven pairs; it is distinguished from *Dicranocercaria molluscipeta* in having a longer tail with furcae longer than the body. *C. amplicoecata* n.sp., from *Australorbis immunis* collected at Santos, differs from *C. douglasi* and *C. ranae* in the distribution of the cuticular spines, absence of unpigmented eye-spots and in the arrangement of the caudal cells; it differs from *C. micradena* in that the penetration glands lie in front of the acetabulum and are not divided by it into two groups. *C. ocellifera* is redescribed from *Australorbis immunis*. M.MCK.

6—Memorias do Instituto Oswaldo Cruz.

a. MACHADO DE MENDONÇA, J., 1953.—" *Heterakis isolonche* Linstow, 1906 e *Heterakis gallinae* (Gmelin, 1790), agentes causais da Tiflite verrucosa em faisões no Jardim Zoológico do Distrito Federal." **51,** 675–703.

(606a) Machado de Mendonça redescribes *Heterakis gallinae* and *H. isolonche* from merous specimens found in the caeca and caecal walls of *Phasianus colchicus torquatus* and *rysolophus pictus* from Brazil. He lists variations in specimens of *H. isolonche* and the spicule ngths of 45 males. His own and previously recorded measurements for *H. isolonche* are bulated against those of *H. interlabiata* and *H. hastata* which are considered, with *. neoplastica*, to be synonymous with *H. isolonche*. Machado confirms the specific validity *H. putaustralis*, *H. lanei* and *H. variabilis*. The heterakids from birds in the Calcutta zoo hich Maplestone in 1923 identified as *H. isolonche* were correctly named except for those om *Tragopan satyra*. M.MCK.

7—Military Surgeon.

a. RODNEY, M. B., SONNENBERG, B. & DALTON, R. R., 1953.—" A survey of intestinal parasitic infection found in feces of formalin-fixed appendices." **113** (3), 200–205.
b. KEAN, B. H., 1953.—" Parasitic diseases among veterans at Halloran Hospital 1947–1951." **113** (5), 399–402.

(607a) The faecal contents of three out of 113 appendices gave evidence of helminth fection. In two there were *Strongyloides* larvae in association with granulomatous ppendicitis and in one there was an unidentified ovum. A marked diffuse eosinophilia in e appendix is suggestive of an allergic manifestation, possibly of parasitic origin. R.T.L.

(607b) Parasitic disease has not been a major problem among American veterans of ie second World War. Only 135 out of 2,500 individuals examined at Halloran Hospital etween 1947 and 1951 showed evidence of helminth infections, viz., hookworm 28, *Ascaris* 4, *trongyloides* 21, whipworm 49, *Schistosoma mansoni* 22, *Clonorchis* 1, *Taenia* sp. 3, *Wuchereria ancrofti* 3 and *W. malayi* 2. Of the three *W. bancrofti* infections, one was acquired in British uiana, one in the New Hebrides and the third somewhere in the South Pacific. [The probable ources of the other infections are not noted.] R.T.L.

8—Minerva Medica.

a. POLI, E. & GIANNI, A., 1953.—" Non comune reperto di laboratorio in aiuto alla diagnosi di echinococcosi polmonare." Anno 44, **1** (40), 1320–1322.
b. ROSSI, G. & GENESI, M., 1953.—" Pseudotumori parassitari. A proposito di quattro casi di nematodiasi autoctona da parassita filarioide." Anno 44, **1** (45), 1517–1525.

(608b) From the Vercelli district of north Italy, Rossi & Genesi describe four cases which nodules were caused by unidentified filariids. The nodules consisted mainly of anular tissue with many eosinophils, the first containing a filariid in two fragments, the cond a partly calcified specimen, the third a young filariid in a good state of preservation id the fourth a degenerated specimen. P.M.B.

9—Minerva Urologica.

a. CAMAIN, R., 1953.—"Schistosomiases génitales féminines et masculines à *S. haematobium* observées en Afrique occidentale française." **5** (4), 123–133.
b. LE GAC, P., LEMAIGRE, C. & TOURNIER-LASSERVE, C., 1953.—" Contribution à l'étude de la diffusion de la bilharziose vésicale en Oubangui-Chari (A.E.F.)." **5** (4), 133–134.
c. BOUCHERON, M. M. & GORSSE, M., 1953.—" Bilharziose vésicale à forme tumorale." **5** (4), 135–136.
d. GORSSE, M., 1953.—" Traitement et tests de guérison de la bilharziose vésicale." **5** (4), 136–143.
e. MARILL, F. G., 1953.—" Sur les risques de diffusion en Algérie de la bilharziose urinaire." **5** (4), 143–145.

f. HOLLANDE, A. & CHABELARD, R., 1953.—" Essai de lutte biologique par *Dimoeriopsis destructor* Hollande et Pesson (protozoaire flagellé) contre les bilharzioses et les distomatoses." **5** (4), 145.

g. SIMONET, 1953.—" Un foyer de bilharziose vésicale dans l'Annexe de la Saoura (Sahara oranais)." **5** (4), 146–147.

h. POBIL, J. & DÍAZ Y DÍAZ, M., 1953.—" La hidatidosis paravesical. Contribución á su casuística." **5** (4), 158–163.

(609a) [The text of this paper is the same as that which appeared in *Bull. Soc. Path. exot.*, **46**, 412–434 but it is illustrated by eight photomicrographs. For abstract see Helm. Abs., **22**, No. 90g.]

(609b) [The information in this paper is identical with that in one published by the same authors under a different title in *Bull. Soc. Path. exot.*, **46**, 685–688. For abstract see Helm. Abs., **22**, No. 382a.]

(609d) Gorsse describes in some detail the clinical, parasitological, humoral and endoscopic evidence of infection with *Schistosoma haematobium*. He is of the opinion that all four must be considered in assessing the efficacy of treatment. Using these criteria of cure he treated 57 patients with potassium antimony tartrate, 11 with fouadin and 100 with anthiomaline, all in the standard doses recommended. None appeared to be completely cured with tartar emetic and only one with fouadin. Anthiomaline gave better results, although not as good as have been reported, and appears at present to be the most efficient drug. Although antimony is specific against schistosomiasis it is insufficient alone and it remains to find some chemical which, when used with antimony, will kill *Schistosoma haematobium*. S.W.

(609e) Following a survey of the distribution of *Bulinus contortus* in Algeria, Marill concludes that it is possible that schistosomiasis haematobia could easily become established at points other than Saint-Aimé and Fondouk where it is already endemic. He considers the possibilities of control by means of snail eradication and by preventing infected workers from settling in *B. contortus* areas unless they have undergone a course of treatment. S.W.

(609f) Hollande & Chabelard describe briefly the morphology of a small flagellate, *Dimoeriopsis destructor*, which parasitizes the eggs of aquatic gastropods. They are of the opinion that it could be of great value in the biological control of schistosome and other trematode intermediaries, especially as it shows a tendency to form resistant cysts enabling it to survive from year to year. In a small field test carried out near Paris, its introduction into a stream produced a noticeable fall in the population of limnaeids and planorbids. S.W.

(609g) [The information contained in this paper has already appeared in full in *Arch. Inst. Pasteur Algér.*, **30**, 134–145. For abstract see Helm. Abs., **21**, No. 182a.]

610—Monatshefte für Veterinärmedizin.

a. KETZ, H. A., 1953.—" Trichinen in der Herzmuskulatur und im Nierengewebe bei an Trichinose verendeten Syrischen Goldhamstern." **8** (20), 487–489.

(610a) Ketz reports the finding of coiled Trichinella larvae in the heart musculature and renal tissues of three golden hamsters which died 25, 35 and 43 days respectively after experimental infection. All three animals showed unusually heavy infection in the whole musculature. A.E.F.

611—Nederlandsch Tijdschrift voor Geneeskunde.

a. SALOMÉ, B. Z., 1953.—" Het vóórkomen van Schistosoma-dermatitis in Nederland." **97** (50), 3228–3232. [English summary p. 3232.]

(611a) Schistosome dermatitis, caused by cercariae of the ocellata and the gyrauli group, has been observed in the Netherlands among the inhabitants of the north-western part of the province of Overijssel; it has been produced in human volunteers experimentally with *Cercaria neocellata* from *Limnaea palustris* and *Cercaria gyrauli* from *Planorbis planorbis* obtained from north of Amsterdam. R.T.L.

12—New Zealand Medical Journal.

a. HAWES, S. C., 1953.—" Hydatid disease of the brain." [Correspondence.] **52** (290), 299–300.

13—Nordisk Medicin.

a. ROELSGAARD, M., 1953.—" Lungeforandringer ved paragonimiasis." **50** (30), 1040–1042. [English summary p. 1042.]

(613a) Three cases of paragonimiasis acquired in the Far East are illustrated by X-ray hotographs. The diagnosis was first established by the finding of eggs in the sputum. R.T.L.

14—Nordisk Veterinaermedicin.

a. VELLING, G., 1953.—" Capillariosis hos høns." **5** (7), 548–558. [English & German summaries pp. 557–558.]

b. HÖNIG, G. & OLSSON, L., 1953.—" Något om bekämpning av spolmask hos häst och svin." **5** (11), 897–904. [English & German summaries p. 904.]

(614a) Velling describes the clinical symptoms and pathological changes observed in wo outbreaks of capillariasis on chicken farms. Neither carbon tetrachloride nor pheno- hiazine was effective. R.T.L.

(614b) Enteric-coated granules containing 70% sodium fluoride freed 101 horses of *arascaris equorum* after three or four treatments given at intervals of three to six weeks. The osage used was 4·5 gm. to 27 gm. according to age, condition and size. A dose of 4·5 gm. f the granules per 25 kg. body-weight was also effective in removing *Ascaris lumbricoides* om pigs. R.T.L.

15—North American Veterinarian.

a. ERDHEIM, M., 1953.—" Avitaminosis with severe parasitism. A case report." **34** (12), 856–857.

b. GRANO, E. & OLMSTED, R. C., 1953.—" Dermatitis caused by *Rhabditis* larvae." **34** (12), 873–874.

(615a) A number of steers which had been fed on coarse, poor quality hay in very mall amounts showed anasarca, lachrymation, emaciation, rough coats and were heavily nfested with lice. The faeces contained many trichostrongylid ova. Owing to the severity f the symptoms, treatment for parasitism was delayed for a month during which they received good ration, highly fortified with clovite as a source of vitamins A and D. At the end of this eriod they were given, every five days, three tablespoonfuls of ribophene-D, a low-level henothiazine mixture. When turned out to clean grazing their condition improved. R.T.L.

(615b) A further case of dermatitis due to *Rhabditis* larvae is recorded in a dog in the J.S.A. It occurred in a five-year-old fox terrier in a breeding kennel in Rockville, Conn. 'he infection affected the ventral third of the thorax and the lateral surfaces of both hocks. crapings showed numerous, very active nematode larvae and the areas affected were very ruritic, denuded of hair and showed small erythematous, raised papules. R.T.L.

16—Nosokomeiaka Chronica.

a. SPHANGOS, J., 1953.—[On a case of human distomiasis.] Year 1953, 5 pp. [Reprint.] [In Greek: English summary.]

(616a) Sphangos describes a case of *Heterophyes heterophyes* infection in a man in reece. The parasite had been acquired by eating *Mugil cephalus*, either salted or smoked, hich is common in the Missolonghi region. This appears to be the first record in Greece or urope. S.W.

617—Notas del Museo de la Ciudad Eva Perón.

a. RINGUELET, R. A., 1953.—" Notas sobre hirudíneos neotropicales. VII. Un nuevo hemadípsido del género *Mesobdella* Blnch." **16** (Zoología No. 139), pp. 185–193.
b. RINGUELET, R. A., 1953.—" Notas sobre hirudíneos neotropicales. VIII. Algunas especies de Bolivia y Perú." **16** (Zoología No. 142), pp. 215–224.
c. RINGUELET, R. A., 1953.—" Notas sobre hirudíneos neotropicales. IX. Rehabilitación del género *Cyclobdella* Weyenbergh." **16** (Zoología No. 143), pp. 259–272.

(617a) The leech *Mesobdella notohilica* n.sp. was found on the frog *Pleurodema bibroni* in the territory of Río Negro, Argentina. It differs from *M. gemmata* chiefly in that the gonopores in the new species are separated by five instead of four segments and that there are 11 pairs of testes instead of 10. A key is given for the three known haemadipsid leeches of South America. The morphology of the new species confirms that *Mesobdella* cannot be allied with *Dietocostoma*. Ringuelet suggests the erection of Erpobdelloidea n. superf. for the Erpobdellidae and of Hirudinoidea n. superf. for the families Haemadipsidae, Hirudinidae and Xerobdellidae of the Arhynchobdellida. M.MCK.

(617b) Ringuelet describes *Semiscolex similis*, *Helobdella duplicata*, *H. obscura* and an immature *Helobdella*, possibly a new species, and gives their distribution. This is the first record of leeches in Bolivia. The new species of *Helobdella* is distinguished from the other four *Helobdella* species with subdivided segments because the secondary grooves do not divide the segments equally but are displaced posteriorly. M.MCK.

(617c) Ringuelet redescribes *Cyclobdella* Weyenbergh, 1879 and *C. glabra* from specimens collected in northern Argentina, giving the first account of the internal anatomy of this species. Blanchard made *Cyclobdella* synonymous with *Semiscolex* in 1896 and subsequent workers, including the author in 1944, accepted this erroneous assumption. The female genitalia are quite unlike those of *Semiscolex*, being erpobdelliform and reminiscent of those of *Orchibdella*. The ovaries are thick reflexed tubes instead of being rounded and their ducts join above the gonopore in a minute vagina. In the male *Cyclobdella*, as in *Orchibdella*, the epididymis is lax and not clustered and there are bulbs on the ejaculatory ducts. The evolution of hirudinid and erpobdellid characters is discussed. The author deplores the accepted but unjustifiable division of Hirudinea into Gnathobdellidae and Pharyngobdellidae. M.MCK.

618—Nuova Veterinaria.

a. GENTILE, G., 1953.—" Il potere antigene del liquido cistico idatideo nelle cavie." **29** (3), 69–74; (4), 101–104.

(618a) Hydatid fluid of ovine or bovine origin caused no allergic reaction in guinea-pigs when they were subjected to intradermal tests 15 and 30 days after the end of a sensitizing treatment; this had consisted of four injections of 3 c.c. of the fluid at three-day intervals, the first two subcutaneously and the other two intraperitoneally. Deviation of the complement, using serum from 11 guinea-pigs bled about 40 days after the end of the preparatory treatment, was positive in seven, doubtful in three and negative in one. In seven guinea-pigs, three of which were positive to the complement deviation test, a slight increase in eosinophils which was observed at the end of the sensitizing period was still present, though to a lesser degree, after 15 days and returned to normal by the 30th day. There was no difference in the reactions whether the fluid was of ovine or bovine origin or whether it was passed through a Berkefeld filter or not. P.M.B.

619—Nuovi Annali d'Igiene e Microbiologia. Rome.

a. SAGGESE, S., 1953.—" Osservazioni epidemiologiche sui casi di echinococcosi operati a Roma dal 1941 al 1951." **4** (1), 45–52. [English & French summaries pp. 51–52.]
b. GIULIANI, V., 1953.—" Osservazioni sulla idatidosi in Provincia di Aquila." **4** (5), 368–372. [English & French summaries pp. 371–372.]

c. LOMBARDO, G., 1953.—" Sulla frequenza delle parassitosi elmintiche nell'uomo adulto siciliano (Catania e Sicilia Orientale)." **4** (5), 373–382. [English & French summaries pp. 381–382.]

d. LOMBARDO, G., 1953.—" Esame comparativo dei metodi di arricchimento per la ricerca delle uova di elminti nelle feci." **4** (5), 383–389. [English & French summaries p. 388.]

(619c) Helminth ova were found in the faeces of 46 out of 105 convalescents in the clinic f the University of Catania. *Trichuris trichiura* was present in 35, *Ascaris lumbricoides* in 10, *nterobius vermicularis* in three, *Hymenolepis nana* in three, *Taenia solium* in two and *T. saginata* one. Although the mollusc vectors are present in Sicily, human infections with *Fasciola epatica, Schistosoma haematobium* and *S. mansoni* are unknown. The previous records of elminth ova in the faeces of man in regions around the Mediterranean are tabulated. M.MCK.

(619d) Lombardo compared the three techniques of Faust, Telemann and Barthélemy or concentrating helminth ova in faeces. He made 130 faecal examinations on 55 individuals hat revealed Ascaris, Trichuris, Enterobius and cyclophyllids. Faust's was the most efficient ethod and the only one suitable for detecting Taenia embryophores. Telemann's method as the least effective. M.MCK.

20—Oikos. Copenhagen.

a. WIKGREN, B. J., 1953.—" The influence of trematode infection on the gastropod fauna of shores and rock pools." **4** (2), 172–177.

(620a) It has been assumed that fluctuations in snail populations may be due to trematode nfections. A comparison was made of the degree of infection in the molluscan fauna on the hores and in the rock pools in the archipelago near Tvärminne, Finland. Twelve out of 21 hores examined were infested whereas 25 out of 30 rock pools were infested. The degree of nfection of the individual snail populations fluctuated greatly but was highest on bird islets here the avifauna was rich. The immediate surroundings and the amount of vegetation re also oecological factors. Trematode infection did not influence the distribution of the ifferent species of *Limnaea* but it is of great importance in the population oecology of snails, t least in ponds and rock pools. R.T.L.

21—Pediatrické Listy.

a. CICVÁREK, Z., MYŠKA, P. & MYŠKOVÁ, D., 1953.—" Výskyt črevných parazitov u detí stredoslovenského okresu." **8** (1), 32–35. [English & Russian summaries p. 34.]

(621a) In this survey of the helminth parasites of 1,000 children in central Slovakia, 95 were found to be infected with *Ascaris lumbricoides*, 75 with *Trichuris trichiura* and nine with *Enterobius vermicularis*. Double infections of *Ascaris* and *Trichuris* occurred in 55, of *Ascaris* and *Enterobius* in three and of *Trichuris* and *Enterobius* in three. S.W.

22—Pediatrics. Springfield, Ill.

a. MILBURN, Jr., C. L. & ERNST, K. F., 1953.—" Eosinophilia-hepatomegaly syndrome of infants and young children. Report of a case due to invasion of liver by nematode larvae." **11** (4), 358–367. [Spanish summary p. 367.]

b. JUNG, R. C. & BEAVER, P. C., 1953.—" Treatment of enterobiasis (pinworm infestation) with diphenan^R, egressin^R and gentian violet." **11** (6), 611–616. [Spanish summary p. 616.]

(622a) Attention is drawn to a newly recognized syndrome in infants in which chronic osinophilia, hepatomegaly with eosinophilic infiltrative and granulomatous lesions were bserved. The syndrome has all the aspects of an antigen-hyperergic disease and has been ound to be associated with nematode larvae invasions of the liver in four cases, one of which now reported from Fort Belvoir, Virginia. The larva in the present case was probably that f *Toxocara canis*. R.T.L.

(622b) Jung & Beaver made a comparative, clinical evaluation of the three anthelmintics now advocated for enterobiasis and found that whereas diphenan and egressin had no detectable anthelmintic effect in children when given in high dosage, a standard seven-day course of gentian violet cured at least 80% of 33 heavily infected children. Egressin slightly decreased the frequency of egg deposition. R.T.L.

623—Pemberitaan Balai Besar Penjelidikan Pertanian, Bogor.

a. VECHT, J. VAN DER, 1953.—" The problem of the mentek disease of rice in Java." No. 137, 88 pp. [Indonesian summary pp. 87–88.]

(623a) In this comprehensive paper van der Vecht starts by giving a detailed history of all past investigations into the mentek disease of rice and a careful analysis of the symptoms. He then gives an account of the distribution of the disease in Java and Madura, the fluctuations in the years 1916–40 and the seasonal incidence. He finds that it is essentially a disease of the West Monsoon rice crop and reaches a maximum in fields sown in January and February. A careful examination of the factors influencing the development of mentek includes consideration of varietal resistance, soil factors, climate and cultural practices. He concludes that the most destructive form of the disease is the result of severe infestation of the roots by nematodes (*Radopholus oryzae*) in combination with very unfavourable growth conditions reducing the capacity for recovery of the plant. Variations in severity of the disease are probably closely associated with soil conditions and climate which influence the development of new roots. In a brief section on control he recommends the development of resistant varieties of rice and of measures to improve growth conditions and to reduce weeds which may harbour the nematodes concerned. Lines of research needing further attention are summarized. M.T.F.

624—Philippine Journal of Animal Industry.

a. REFUERZO, P. G. & GONZALES, F. Z., 1953.—"Parasites of Philippine livestock, I: Helminths of the gastro-intestinal tract of pigs." Year 1951, **12** (1/4), 1–11.

(624a) Refuerzo & Gonzales annotate and, in some cases, give drawings of the nine nematodes and one acanthocephalan which they collected from pigs killed in Manila. The pigs were from various areas and represent a rough cross section of the swine population of the archipelago. There are no new records. S.W.

625—Philippine Journal of Science.

a. YUTUC, L. M., 1953.—" *Physaloptera pseudopraeputialis* n.sp.—a stomach worm of the cat (Nematoda: Physalopterinae)." **82** (3), 221–225.

(625a) *Physaloptera pseudopraeputialis* n.sp., parasitic in the stomach of domestic cats in the neighbourhood of Manila, has at its posterior end a prepuce-like sheath as in *P. praeputialis*, *P. malayensis* and *P. canis*. It differs from these in the arrangement of the sessile papillae. The male tail is spinous on the ventral surface. The outer and inner teeth of each lip are equal or subequal. Of the 76 cats autopsied 28 were infected, although no ova had been detected in the faeces. G.I.P.

626—Plant Disease Reporter.

a. GARREN, K. H., 1953.—" Stem nematode disease of greenhouse hydrangeas." **37** (6), 340–342.
b. SUIT, R. F. & DuCHARME, E. P., 1953.—" The burrowing nematode and other parasitic nematodes in relation to spreading decline of citrus." **37** (7), 379–383.
c. JENSEN, H. J., 1953.—" Experimental greenhouse host range studies of two root-lesion nematodes, *Pratylenchus vulnus* and *Pratylenchus penetrans*." **37** (7), 384–387.
d. HARDISON, J. R. & JENSEN, H. J., 1953.—" A seed nematode observed in orchard grass in Oregon." **37** (7), 388–389.

e. SLEETH, B., 1953.—" Winter Haven decline of citrus." **37** (8), 425–426.
f. DuCHARME, E. P. & SUIT, R. F., 1953.—" Nematodes associated with avocado roots in citrus spreading decline areas." **37** (8), 427–428.
g. YOUNT, W. L., 1953.—" Strawberry dwarf in Lancaster County, Pennsylvania." **37** (8), 429.
h. HOLDEMAN, Q. L. & GRAHAM, T. W., 1953.—" The effect of different plant species on the population trends of the sting nematode." **37** (10), 497–500.
i. REYNOLDS, H. W. & EVANS, M. M., 1953.—" The stylet nematode, *Tylenchorhynchus dubius*, a root parasite of economic importance in the southwest." **37** (11), 540–544.
j. KEMP, W. G., 1953.—" A nematode associated with a root rot of *Scindapsus*." **37** (11), 545–546.
k. YOUNG, P. A., 1953.—" Damage caused by meadow nematodes to corn in east Texas." **37** (12), 599–600.

(626a) The symptoms of attack by stem nematode on green-house hydrangeas, *Hydrangea opuloides*, are described and figured. Tip necrosis, scattered necrotic areas and prominent stem hypertrophy were the characters of the disease. [The nematodes appear to have been *Ditylenchus dipsaci* but Steiner was unable to be definite on this point.] J.B.G.

(626b) [This appears to be substantially the same as a paper by the same authors which appeared in *Calif. Citrogr.* 1953, **38**, 307, 319–322. For abstract see Helm. Abs., **22**, No. 187a.]

(626c) Of 60 different plants tested for susceptibility to *Pratylenchus vulnus* 29 were susceptible. The roots of five other plants were entered occasionally but no eggs were laid. *P. penetrans* was tested against 33 different plants all of which were susceptible. The two species differ mainly in that *P. penetrans* in attracted to members of the Gramineae while *P. vulnus* avoids them. J.B.G.

(626d) *Dactylis glomerata* was found in Oregon attacked by a species of *Anguina*. The short, thick galls in the distorted panicles are figured and it is remarked that the material is being further studied. J.B.G.

(626e) Winter Haven decline of citrus in Texas on trees ten or more years old appears not to be caused by *Tylenchulus semi-penetrans*. The trouble may be of fungal origin. J.B.G.

(626f) Avocado roots are attacked by *Radopholus similis* which causes characteristic damage as localized spots or as extensive, girdling, depressed lesions in the fleshy cortex. Other nematodes associated with the roots were *Pratylenchus pratensis*, *Aphelenchus avenae*, *Criconemoides citri*, *Trichodorus* sp. and various *Dorylaimus*. *R. similis* causes a decline in the avocados. J.B.G.

(626g) Strawberry dwarf disease caused by *Aphelenchoides fragariae* has been found in Lancaster County, Pa., in two acres of strawberries of eight varieties. It seems probable that the disease was introduced with the plants, and was spread by heavy rains and water run-off on the sloping site. About 20% of the plants showed symptoms which are described. M.T.F.

(626h) *Belonolaimus gracilis* is a serious pest of many crops in the south-east of the U.S.A. The authors show that a variety of plants build up a population, others maintain it and carry it over till a new susceptible crop is sown and a few, including tobacco, crotalaria and watermelon, reduce the population. These three plants appear to inhibit reproduction. Of common weeds, crab grass (*Digitaria sanguinalis*) helps greatly in maintaining populations. J.B.G.

(626i) Experiments showed that *Tylenchorhynchus dubius* prevented normal growth of *Gossypium hirsutum* var. *punctatum* and of *Phaseolus acutifolius* var. *latifolius* by feeding on the root tips with consequent reduction in the size of the root system. J.B.G.

(626j) *Meloidogyne* sp. was found associated with a root rot of *Scindapsus aureus* in Canada. Small galls were apparent on the smaller roots but on larger roots no galling showed, although adult nematodes were found in cavities in the roots. Leaves shrivel and die and infested plants may die. J.B.G.

(626k) *Pratylenchus* sp. causes severe dwarfing of maize in Texas. Roots are poor, stunted and bear lesions through which parasitic fungi and bacteria can enter. Early death of the plant is common. *P. zeae* in maize, *P. pratensis* on boxwood and *Pratylenchus sp.* on rose roots have all been found in Texas. J.B.G.

627—Poultry Science.

a. EDGAR, S. A., 1953.—" A preliminary check list of parasites of some domestic fowls of Alabama." **32** (6), 949–952.

628—Proceedings of the American Veterinary Medical Association.

a. BROCK, W. E., PEARSON, C. C. & KLIEWER, I. O., 1953.—" Daily minimal dosage of phenothiazine in control of nematode infections in cattle." 89th Annual Meeting (1952), pp. 167–171.
b. LUCKER, J. T., 1953.—" Variability in effect of stomach worm, *Haemonchus contortus*, infections in lambs." 89th Annual Meeting (1952), pp. 171–178.
c. SHOPE, R. E., 1953.—" Swine and human health." 89th Annual Meeting (1952), pp. 381–384.
d. SCHWARTZ, B., 1953.—" Parasitic diseases of swine transmissible to man." 89th Annual Meeting (1952), pp. 385–386.

(628a) In calves the production of ova by gastro-intestinal nematodes was slightly depressed by daily doses of 0·25 gm., 0·5 gm. and 1·0 gm. of phenothiazine. The number of worms was apparently reduced by 2·0 gm. daily. In a field trial for the treatment of lungworms daily doses of 2·0 gm. per calf stopped the losses in a herd of 500 calves. The number of lungworm larvae in the faeces of an experimentally infected calf was reduced to zero in six weeks and a clean contact calf did not become infected in twelve weeks when the calves received 2·0 gm. each daily. R.T.L.

(628b) Lambs experimentally infected with *Haemonchus contortus* varied in their resistance to infection and in their inherent capacity to compensate for blood loss. Where the degree of exposure to infection is similar, capacity to combat the effects of the parasitism may tend to increase with age. R.T.L.

(628d) Schwartz considers that the danger to human health in the U.S.A. from trichinelliasis has been exaggerated in recent years. Trichinae occur only in small numbers in pigs raised on farms. No case of infection was discovered by microscopical examination of 3,031 diaphragms of farm-raised pigs from the mid-west, and only on 19 occasions were the pillars of the diaphragm found infected after digestion in an acidified solution of pepsin. The maximum number of larvae in any one sample was seven to eight per gramme of muscle tissue. In 1,328 garbage-fed pigs in Boston, New York and Philadelphia, 149 (11·21%) were found to contain trichinae by the digestion technique and only 64 (4·81%) by direct microscopical examination. Assuming that garbage-fed pigs are the main source of human infection, the role of the rat in spreading trichinelliasis deserves attention but in Schwartz's opinion this role is a minor one. *Cysticercus cellulosae* is exceedingly rare in the U.S.A. Only 10 to 26 instances of this infection in pigs were observed annually between 1947 and 1951 during an annual slaughter of from 45 to 59 million pigs under federal meat inspection. R.T.L.

629—Proceedings of the Bulb Growers' Short Course, Western Washington Experiment Station.

a. COURTNEY, W. D., 1953.—" Proper storage of hot-water treated iris." Year 1953, pp. 6–8.
b. BOSHER, J. E., 1953.—" Rotation and sanitation in nematode control." Year 1953, pp. 8, 10.

630—Proceedings of the Florida State Horticultural Society.

a. SUIT, R. F., DuCHARME, E. P., BROOKS, T. L. & FORD, H. W., 1953.—" Factors in the control of the burrowing nematode on citrus." **66,** 46–49.
b. PERRY, V. G., 1953.—" Return of nematodes following fumigation of Florida soils." **66,** 112–114.
c. GOOD, Jr., J. M., 1953.—" Characteristics and occurrence of certain nematodes in Florida soils." **66,** 117–121.
d. KELSHEIMER, E. G. & OVERMAN, A. J., 1953.—" Notes on some ectoparasitic nematodes found attacking lawns in the Tampa Bay area." **66,** 301–303.
e. REARK, J. B., 1953.—" Cultivation of the genus *Alocasia* in Florida." **66,** 326–331.

(630a) The authors find that the greatest numbers of burrowing nematodes (*Radopholus similis*) occurring in the soil of decline areas in citrus groves are at depths of between one and five feet; some were found in feeder roots 10–12 feet deep. Examination of the roots of 10 cover crop plants and of lychee from infested soil failed to show any evidence of infestation. The best means of control of the burrowing nematode is by removal of the trees showing decline plus four apparently good trees in advance, and the treatment of the soil with D-D mixture at 600 lb. per acre injected to a depth of 10–12 inches. The area should not be replanted until at least two months after treatment. A search is being made for rootstocks resistant to this nematode. M.T.F.

(630b) Perry has made observations to determine whether certain plant-parasitic nematodes build up to greater numbers in soil which has been fumigated than in untreated soil. *Belonolaimus gracilis* is easily controlled by soil fumigants and reproduces slowly: there is no evidence of a build up above normal in fumigated soil. The stubby-root nematode, *Trichodorus* sp., reproduces very rapidly under favourable conditions and the second susceptible crop following soil fumigation may suffer serious injury. No evidence of abnormal build up after soil fumigation has been observed with *Meloidogyne* spp. and *Pratylenchus* spp. However, if the fumigation is inefficient the remaining nematodes may build up more rapidly on the abundant, healthy roots present than on a heavily infested crop. The awl nematode, *Dolichodorus heterocephalus*, behaves much as *B. gracilis* and may reproduce faster but there is no evidence of an abnormally high population build up after soil fumigation. M.T.F.

(630c) This is a brief general summary of the morphology of nematodes and the characters distinguishing the various types of nematode found in soil. M.T.F.

(630d) Diseased patches of St. Augustine grass were found to have root damage of the type associated with the presence of ectoparasitic nematodes. The following nematodes were extracted from patches of chlorotic turf: *Trichodorus* sp., *Belonolaimus gracilis*, *Radopholus similis*, *Criconemoides* sp., *Ditylenchus* sp. and *Hoplolaimus coronatus*. M.T.F.

(630e) In this paper on the cultivation of *Alocasia*, Reark mentions that root-knot eelworm is one of the four serious pests which attack these plants. For control of root-knot he suggests cutting off all roots flush with the stem, reducing the number of leaves to one, dipping in parathion solution and repotting in sterile sphagnum. S.W.

631—Proceedings of the Royal Society of Medicine.

a. CROW, K. D. & SEVILLE, R. H., 1953.—" Onchocerciasis." **46** (4), 289–290. [Discussion p. 290.]

(631a) An intensely irritating papular eruption appeared on the back and later on the sides of the buttocks of a European engaged on agricultural research in the interior of the Gold Coast. The affected area was covered with flesh-coloured, rounded papules about one-eighth of an inch in diameter. The papules on sectioning showed non-specific perivascular eosinophilic and round cell infiltration. No embryos were found in skin shavings. A filarial skin test was positive but a filarial complement fixation test was negative. The blood was negative and no Onchocerca nodules were present. After treatment with Banocide at the

rate of 0·5 mg. per kg. body-weight three times daily for a week there was a considerable allergic reaction of the Herxheimer type. More papules appeared and the irritation became more intense; there was some photophobia. After two weeks the full dosage of 3 mg. per kg. was reached and maintained for three weeks. By that time all the skin lesions and the photophobia had disappeared. R.T.L.

632—Proceedings of the Royal Society of Queensland.

a. MACKERRAS, I. M., MACKERRAS, M. J. & SANDARS, D. F., 1953.—" Parasites of the bandicoot, *Isoodon obesulus*." Year 1951, **63**, 61–63.
b. SANDARS, D. F., 1953.—" A study of Diphyllobothriidae (Cestoda) from Australian hosts." Year 1951, **63**, 65–70.
c. MACKERRAS, M. J. & SANDARS, D. F., 1953.—" Two new metastrongyle lung-worms from Australian marsupials." Year 1951, **63**, 71–76.

(632a) A preliminary list of the parasites of *Isoodon obesula* collected in south-east Queensland mentions two trematodes, three cestodes, seven nematodes and one acanthocephalan. A *Platynosomum* sp., a *Dipetalonema* sp., a species of Capillariinae in the oesophageal wall and a species of Metastrongylidae in the subcutaneous tissues are new records. R.T.L.

(632b) To the list of Diphyllobothriidae of Australia made by Young (1939) the following later records are added: *Bothridium ornatum* in *Python spilotes* var. *variegatus* in Queensland, *Diphyllobothrium erinacei* in *Vulpes vulpes*, *D. latum* in *Canis familiaris* and *Sparganum* sp. in *Sus scrofa* and *Dasyurops maculatus*. In the greater Brisbane area Sandars has now found spargana as natural infections in *Natrix mairii*, *Pseudechis porphyriacus* and *Hyla caerulea*. She has shown that *Cyclops varicans* can act as a host for the procercoid stage of *Diphyllobothrium erinacei* to which, it is believed, the spargana recorded from Queensland hosts all belong. R.T.L.

(632c) *Marsupostrongylus bronchialus* n.g., n.sp. from the bandicoot *Isoodon obesula* and *Plectostrongylus fragilis* n.g., n.sp. from the marsupial mouse *Antechinus flavipes* are the first lungworms to be recorded in marsupials in Australia. *Marsupostrongylus* differs from *Heterostrongylus* in having equal spicules; there is no gubernaculum, the bursa is small, the externo-dorsal rays are short and the dorso-dorsal ray is rudimentary. *Plectostrongylus* resembles *Marsupostrongylus* in bursal formula and in having equal spicules, but there is a gubernaculum, the female tail is pointed and the vagina is long and ends in a muscular ovejector. Neither of these genera can be definitely allocated to a known subfamily of Metastrongylidae. R.T.L.

633—Proceedings of the Society for Experimental Biology and Medicine.

a. SENTERFIT, L. B., 1953.—" Immobilization of *Schistosoma mansoni* miracidia by immune serum." **84** (1), 5–7.
b. OLIVER-GONZÁLEZ, J., 1953.—" Adsorption of A_2 isoagglutinogen-like substances of infectious agents on human erythrocytes." **84** (3), 520–522.

(633a) Senterfit tested the effect of immune serum (obtained from a monkey experimentally infected with 500–600 *Schistosoma mansoni* cercariae) on miracidia of *S. mansoni*. He found that the immobilizing factor first appeared about the 39th to 48th day after infection. At dilutions of 1:10 and 1:20 immobilization was complete, at 1:40 and 1:80 there was partial immobilization but some cilia remained active and at 1:160 there was no effect. Uninfected serum was without immobilizing activity. Serum from monkeys infected five-and-a-half years previously with *S. japonicum* still showed immobilizing activity and the use of this reaction in the diagnosis of chronic cases is suggested. S.W.

(633b) Oliver-González has demonstrated that when human erythrocytes of groups O and B are incubated at 37°C. or stored at 6°C. in saline suspensions of polysaccharides obtained from adult *Ascaris lumbricoides*, adult *Taenia saginata* or larval *Trichinella spiralis*, the erythrocytes adsorb the polysaccharides. When the treated erythrocytes were introduced

nto human sera of groups O and B they reduced the $a_2$isoagglutinin titre to zero, thus ehaving as erythrocytes of group A_2. This acquisition by erythrocytes of characteristics of hose of another group and the implications of its possible occurrence during an actual infection re briefly discussed. S.W.

634—Produits Pharmaceutiques. Paris.

a. CAVIER, R., 1953.—" Les anthelminthiques. I. Médicaments destinés à lutter contre les nématodes intestinaux." **8** (5), 239–248.
b. CAVIER, R., 1953.—" Les anthelminthiques. II. Thérapeutique des affections déterminées par les plathelminthes." **8** (8), 407–413.

(634a) Although considerable progress has been made in recent years in the search for anthelmintics, Cavier considers that closer collaboration between chemist, pharmacologist and clinician is necessary. He lays down the following criteria for a good anthelmintic: it should reach the site of the parasite and resist absorption and rapid destruction by the host, it should remain active in the intestinal contents of the host, it should penetrate the body of the parasite and reach its vital organs and it should have a specific action without being toxic to the host. There should be a wide margin of safety between the therapeutic and the toxic dose. Cavier briefly summarizes the history and chemical constitution of the vermifuges of vegetable origin and of the synthetic compounds in current use against intestinal nematodes. R.T.L.

(634b) Cavier continuing his summary of the history and chemical constitution of anthelmintics deals, in this second section, with those drugs in use against cestodes and trematodes. R.T.L.

635—Public Health Reports. Washington.

a. WRIGHT, W. H. & DOBROVOLNY, C. G., 1953.—" Experiments in the control of schistosomiasis in Brazil." **68** (12), 1156–1160.

(635a) In Brazil sodium pentachlorophenate proved the most effective of the chemicals tested in the flowing streams in the highly endemic schistosomiasis region of which Recife in the State of Pernambuco is the centre. In most streams the rate of disappearance of the chemical was rapid and little was carried downstream for more than 4,000 ft. The most effective concentration was 10 p.p.m. but length of time of application was important for 2 p.p.m. for 40 hours were about as effective as high concentrations for eight hours. A single application was frequently followed by a snail mortality of 100% and in parts of some streams there were no living snails over a period of twelve months but repopulation had usually occurred by the fourth month after treatment. Sometimes large and mature snails suddenly appeared in freed waters. On this account eradication cannot be attained in a single year. The technique of application may require considerable variation to meet the different oecological conditions. R.T.L.

636—Publicaciones del Instituto de Biología Aplicada. Barcelona.

a. GADEA, E., 1953.—" Nematodos libres terrestres de la Serranía de Ronda." **13**, 129–153. [English summary p. 152.]
b. GADEA, E., 1953.—" Nematodos libres terrestres de los Montes Cántabros. I." **14**, 71–108. [English summary p. 107.]
c. GADEA, E., 1953.—" Nematodos libres terrestres de la Sierra de Guadarrama." **15**, 113–130. [English summary p. 129.]

(636a) Twenty-seven species of free-living nematodes were recovered from 15 samples of soil and moss from the mountains of the Serranía de Ronda in the southern part of Spain. Most of them are common in Europe. The most frequently found species were *Dorylaimus carteri* 17%, *Plectus cirratus* 12·5%, *Mononchus* (*Prionchulus*) *muscorum* 10% and *Tripyla*

filicaudata 9·6%. New records for Spain are *Dorylaimus gracilis*, *D. parvus*, *D. bryophilus*, *Plectus parvus*, *Monhystera filiformis*, *Cephalobus persegnis*, *Tylenchus davainei* and *T. filiformis*. R.T.L.

(636b) Forty-seven species of free-living nematodes were found in samples of calcareous, siliceous and argillaceous earth, organic and forest soils, moss cushions etc. from an altitude of 2,500 metres in the Cantabrian Mountains, in the north of Spain. Eleven of these species are new records for Spain, viz., *Dorylaimus longicaudatus*, *D. lugdunensis*, *D. acuticauda*, *Dorylaimoides micoletzkyi*, *Tylencholaimus stecki*, *Rhabdolaimus terrestris*, *Rhabditis elongata*, *Acrobeloides bütschlii*, *Tylenchorhynchus dubius*, *Rotylenchus robustus* and *Paraphelenchus pseudoparietinus*. The incidence of the various species in relation to soil acidity, altitude etc. is discussed. The nema fauna of the Cantabrian Mountains greatly resembles that of the Pyrenees and, in general features, is similar to that of other Spanish mountains. R.T.L.

(636c) Gadea records 27 species, belonging to ten families, of free-living nematodes from eight samples of moss and soil taken in the Guadarrama mountain range of central Spain. He tabulates their occurrence under locality, type of substrate, *p*H, altitude, frequency and abundance and gives briefly the oecology of each species, together with its distribution and some morphological details. *Tripyla intermedia* and *T. papillata* are new records for Spain. M.MCK.

637—Publicações Avulsas do Instituto Aggeu Magalhães. Recife.

a. VELOSO, H. P., 1953.—" Nota preliminar sôbre um novo método de aplicação dos moluscocidas no combate à esquistossomose." **2** (5), 47–59. [English summary p. 49.]
b. COELHO, B. & MAGALHÃES FILHO, A., 1953.—" Resultados patológicos de infestação experimental de *Schistosoma mansoni* em macaco *Cebus* sp." **2** (6), 61–97. [English summary pp. 70–71.]
c. BARBOSA, F. S., 1953.—" A propósito da remessa de planorbídeos dessecados, especialmente *A. glabratus*." **2** (7), 99–102. [English summary p. 102.]
d. MAGALHÃES NETO, B., MORAES, J. G. DE, ALMEIDA, A. M. DE & CALADO, O. B., 1953.—"Fatôres que influenciam a atividade moluscocida do cobre em condições de laboratório." **2** (8), 103–113. [English summary pp. 111–112.]
e. DOBROVOLNY, C. G. & BARBOSA, F. S., 1953.—" Field trials of sodium pentachlorophenate as a molluscacide in flowing waters in Brazil." **2** (10), 121–154. [Portuguese summary pp. 155–157.]
f. BARBOSA, F. S. & COÊLHO, M. V., 1953.—" Ação da dessecação sôbre as fases larvárias intracaramujo de *Schistosoma mansoni* em *Australorbis glabratus*." **2** (11), 159–162. [English summary pp. 161–162.]

(637a) Veloso describes the oecology of *Australorbis glabratus* in Caratinga, south Brazil. A cheap mollusicide for field application is an aqueous solution of copper sulphate (1:1,000) sprayed at 300 lb. pressure from collapsible canvas tanks while the snail infested water was being agitated. All the live snails had seemingly been eliminated 150 days later. M.MCK.

(637b) Coelho & Magalhães describe the symptoms and pathological findings in five *Cebus* sp. from Amazonas State, Brazil, which had been experimentally infected with *Schistosoma mansoni*. Three of the monkeys died of the disease, one died in spite of treatment with repodral, and one died accidentally. M.MCK.

(637c) Barbosa reviews various methods for packing and transporting snail vectors of *Schistosoma mansoni*. High humidity and the enclosure of organic matter in the shipping boxes should be avoided. He recommends that the snails should be dried and packed in dry filter paper. They keep alive for up to 30 days and the larval schistosomes survive in good condition for up to 18 days. M.MCK.

(637d) The authors in a study of the effects of different conditions on the molluscicidal activity of copper sulphate have found that mud and tartaric acid inhibit its action considerably, and that the sulphate, acetate and chloride of copper have the same molluscicidal activity in equimolecular concentrations. M.MCK.

(637e) Sodium pentachlorophenate was tested as a molluscicide against *Australorbis ratus* and *Tropicorbis centimetralis*, vectors of *Schistosoma mansoni* at Pernambuco, eastern zil. The chemical was applied by suspending briquettes in the streams, or by using the ip method", whereby an aqueous solution was uniformly delivered. Both were applied periods up to 24 hours and in the streams achieved concentrations of 2 to 60 p.p.m. Single lications in some cases eliminated the snails for a month but most streams became populated after two to four months. Repeated applications kept some streams free up to months. On the whole, the briquette technique seemed the better method. Reductions of %–100% in snail populations should be obtained by applying the molluscicide every 00 ft. downstream at intervals of three or four months. Banks with large snail populations uire further treatment and an aqueous spray is apparently best. The reduction in concentration of sodium pentachlorophenate which always occurred after treatment was found lepend on the speed of the current, distance downstream and the presence of large off-side ls, muddy beds, dense vegetation or turbidity. Fish and the edible ampullarid snails were ed but no poisoning effects were observed in those natives who ate the snails. M.McK.

(637f) *Australorbis glabratus* were observed to lose their infection of *Schistosoma mansoni* desiccation for 20 days. Eight out of 14 snails died during this process but all of the 14 trols survived. M.McK.

—Quarterly Journal of Microscopical Science.

a. SMYTH, J. D., 1953.—" Standardization of methyl green for specific staining of egg-shell material in a trematode." **94** (3), 243–246.

(638a) Smyth tested a number of samples of methyl green as a stain for egg-shell material *Fasciola hepatica* and describes a method of distinguishing specific and non-specific stains paper chromatography. He concludes that only methyl green with an Rf value of 0·83 in stated solvent is specific and only in neutral solution. S.W.

—Rassegna Medica Sarda.

a. TESTA, G., 1953.—" Contributo allo studio dell'appendicite con oxiuri nella Provincia di Cagliari." **55** (1/2), 32–55.

(639a) Enterobius was present in the intestine, and in most cases in the appendix also, 4 out of 50 cases of appendicitis in the province of Cagliari, Sardinia. Testa doubts, how-r, whether the appendicitis could be attributed directly to the worms in the majority of es. P.M.B.

—Rassegna di Medicina Industriale.

a. PIAZZA, V. C., 1953.—" Sulla patogenesi della anchilostomanemia." **22** (6), 329–332.

(640a) Piazza summarizes his investigations on the aetiology of hookworm anaemia e 1928. Some anaemias arise from lack of a hepatic hormone which normally stimulates production of red blood cells by the bone marrow. Hookworm cases secrete this hormone toxic substances from the worms render the bone marrow temporarily (eventually per-nently) incapable of response and anaemia ensues. M.McK.

—Recueil de Médecine Vétérinaire.

a. BÉCHADE, R. & BÉCHADE, A. M., 1953.—" Tétramérose du pigeon dans le département de l'Indre." **129** (10), 645–650.

(641a) The authors report the first record of *Tetrameres fissispina* in pigeons in France. re was a high mortality. The pathological lesions observed and the parasites collected described and illustrated by photographs and photomicrographs. A technique for the essful preservation of female *Tetrameres* as semi-permanent mounts in glycerin jelly is ribed. S.W.

642—Report of the Australian and New Zealand Association for the Advancemer of Science.

a. ROBERTS, F. H. S., 1953.—"Host specificity of livestock parasites in Australia." 29th Meeti (1952), pp. 247–257. [Reprint.]

(642a) The only mollusc which fulfils the biological and physiological requirements *Fasciola hepatica* in South Australia, Victoria, New South Wales and Queensland is *Simlimna subaquatilis* (*S. brazieri*). *Glyptanisus gilberti*, the intermediate host of *Ceylonocotyle streptu coelium*, and *Segnitilia alphena*, that of *Paramphistomum ichikawai*, occur in the same type habitat. That *Moniezia expansa* and *Thysaniezia giardi* are common in sheep but rare in catt and *M. benedeni* is common in cattle but rarely seen in sheep is attributable to the geographic distribution of sheep and cattle in Australia. Hydatid is common in cattle, sheep and pig and occurs in wallabies and kangaroos. In cattle its incidence may reach 80% in some area but most of the cysts in cattle are sterile. The adult is absent from the dog but is found i the dingo and fertile cysts occur in up to 25% of the wallabies. *Stephanurus dentatus* present in pigs and has been seen in the liver of calves occasionally. *Onchocerca gibsoni* rarely found in sheep although common in cattle. In Australia *Chabertia ovina* is restricte to sheep. There are two strains of *Haemonchus contortus* which show morphological differenc in the vulvar flap, near the vulva. Their infective larvae differ in size and in the length of th tail. Cattle are highly resistant to sheep *Haemonchus* but sheep are highly susceptible to th cattle strain. R.T.L

643—Report. Filariasis Research Unit, East Africa.

a. LAURIE, W., 1953.—" Director's report." No. 5 (1953), 22 pp.

(643a) In East Africa the only individuals adversely affected by bancroftian filariasi are the relatively few with elephantiasis or hydrocele. The infection causes no disabilit among the African troops. In Laurie's opinion, large scale control measures cannot b justified. The Central Province was surveyed in 1953. The total filarial rate at Shelui in th Singida District was 4%, at Makuru in the Manyoni District it was 3%, whereas in severa villages in the Eastern Province the rate was from 39% to 57% and in Lake Province it range from 10% to 40%. *Acanthocheilonema perstans* was detected at two places only, viz., 3% i the males at Mikese and 23% at Ilonga in Mahenge-Ulanga District. The microfilaricida effect of treatment of heavily infected cases of bancroftian microfilaraemia by hetrazan was no only immediate but lasted for many months. Only in very early elephantiasis was there an reduction in the size of the affected limb but the recurrent attacks of pain and fever dis appeared in over 50% of those treated. On Ukara the vector mosquitoes were *Anophel gambiae* and *A. funestus*. In the treatment of onchocerciasis the minimal total dosage of hetraza (60 mg. per kg. body-weight), previously shown to abolish skin and eye sensitivity, prove insufficient to destroy the microfilariae. Neostibosan was also tried in 122 lightly infecte cases from the Kakamega area of Kenya. A total dosage of 3 gm. was given intramuscular in daily doses over ten days. While desensitization of the skin and eyes resulted, there was n marked improvement in visual acuity. The eye reactions were never severe as with hetraza The total dosage did not kill all the microfilariae. R.T.

644—Report. Horticultural Education Association. London.

a. COOPER, B. A., 1953.—" Eelworm problems in north Fenland, with special reference to cr rotation." Year 1953, pp. 106–115.

(644a) The three major eelworm problems in the north fenland area in England concer potato root eelworm, onion eelworm and tulip eelworm, and are essentially oecological. Fro a study of potato eelworm populations during crop rotations and under a potato crop, togeth with a consideration of the soil type, Cooper explains the principles on which a rotation ma be based which should not result in a rise in eelworm population. For strong land, main cr potatoes may be grown every 4 to 5 years, for medium silts every 5 to 7 years and for t

ghtest silts 7 to 10 years or longer, but a one-year rotation may be best for early potatoes hich are lifted before the eelworm cysts mature. The other crops in the rotation have little ffect on the eelworms but if a second species of *Heterodera* is present it may be necessary employ alternating rotations. Onion stem eelworm spreads in a field, probably on weeds, hether onions are grown or not and Cooper feels that it is better to grow onions annually nd observe the spread of the eelworm than to move the crop around the farm and risk spreading ie infestation to other fields. Tulip stem eelworm is rapidly becoming widespread: the ifestation shows up at flowering and infested crops should be isolated and destroyed. Experi-ents on hot-water treatment are incomplete although it appears likely that treatment similar that used for daffodils may be suitable if carried out not later than the first week in August.

M.T.F.

45—Reports on the Progress of Applied Chemistry.

a. PETERS, B. G., 1953.—" Control of plant nematodes." **38**, 629–631.

(645a) Peters briefly summarizes recent literature on the nematicidal effects of solubilized romatic compounds, organic mercurials, ammoniacal gas liquor, chloropicrin and methyl romide.

B.G.P.

46—Report of the Rothamsted Experimental Station.

a. PETERS, B. G., 1953.—" Nematology Department." Year 1953, pp. 97–102.

(646a) Among the items of work mentioned in this annual report of the nematology epartment at Rothamsted are the following. All stages in the life-history of *Heterodera uciferae* have been secured; a population level of 64 larvae per gm. has been obtained under eld conditions; white mustard root diffusate does not inhibit hatching in this species. Milford (S.225) is the only spring oat found resistant to *Ditylenchus dipsaci*. Of 24 commercial otato varieties, none showed resistance to *D. destructor*. *Solanum andigenum* produces a root iffusate stimulating the hatching of *Heterodera rostochiensis* and its roots are invaded by the rvae of that species. Changes in field populations of *H. rostochiensis* and *H. major* at several entres are under annual observation. Potato root diffusate breaks down more rapidly in nd and gravel than in peat. Sixteen graminaceous root diffusates had no stimulating effect n *H. rostochiensis*. Pot tests of nematicides have shown derivatives of 8-hydroxyquinoline be of little effect against *H. rostochiensis*.

B.G.P.

47—Revista de Agricultura. São Paulo.

a. FRANCO, E., 1953.—" Nota prévia sôbre as possibilidades de tratamento do 'anel vermelho do coqueiro'." **28** (5/6), 163–174.

(647a) Franco describes preliminary experiments in which coconut palms suffering om red ring disease caused by nematodes were injected with Rhodiatox, a thiophosphate f diethyl-*p*-nitrophenol. The results were inconclusive but further experiments are planned find suitable concentrations and means of application of this chemical.

M.T.F.

48—Revista de Biología Tropical. Universidad de Costa Rica.

a. CÉSPEDES, R., 1953.—" Ascaridiósis hepática y de las vías biliares. Estudio de cinco casos anatomo-clínicos." **1** (2), 197–221. [English & Italian summaries pp. 209–210.]

b. LIZANO, C. & ABATE, J. DE, 1953.—" Incidencia de parásitos intestinales en los niños de la Sección de Pediatría del Hospital San Juan de Dios." **1** (2), 223–233.

(648a) In 1,653 autopsies at two hospitals in Costa Rica, there were five cases of cariasis which terminated fatally from invasion of the liver and bile-ducts.

M.McK.

649—Revista Brasileira de Gastroenterologia.

a. OLIVEIRA, J. L. DE, 1953.—" Fórma aguda de esquistosomose, simulando abcesso do fígado." **5** (1), 69–78. [English summary p. 76.]
b. SETTE, H. & TANDEITNIK, A., 1953.—" Estudo comparativo do oograma nas diferentes válvulas de Houston em esquistosomóticos." **5** (3), 277–282. [English summary pp. 281–282.]
c. PEREIRA, O. A., 1953.—" O problema da esquistosomose mansônica no meio rural brasileiro." **5** (4), 401–416. [English summary pp. 414–415.]
d. FILIZZOLA FILHO, B., 1953.—" A importância da retirada do fragmento de mucosa alto (reto superior) na biópsia retal para estudo da esquistosomose mansoni." **5** (4), 425–428. [English summary pp. 427–428.]

(649b) In 117 patients suffering from schistosomiasis rectal biopsies were performed, 47 before treatment and 70 after receiving sodium antimony tartrate. Counts of schistosome eggs in the Houston valves showed a higher number of positives in the first valve (91·4%) than in the second (87·1%) and third (83·7%). Only rarely did the numbers of eggs vary greatly from one valve to another in the same patient. After treatment the percentage of dead eggs increased in the first and third valves and decreased in the second. P.M.B.

(649c) In this summary of literature on the problem of schistosomiasis mansoni in Brazil, Pereira quotes the figures provided by the public health service, estimating a total of 6 to 8 million cases of infection. P.M.B.

(649d) In the diagnosis of schistosomiasis mansoni by rectal biopsy, Filizzola Filho emphasizes the importance of obtaining fragments from the upper part of the rectum. About 6% of 197 cases, in each of which four fragments were taken, were found positive by the one fragment from the upper part of the rectum whereas the other three were negative in each case. The proportion of live to dead eggs was also higher in fragments from the upper part of the rectum. P.M.B.

650—Revista Brasileira de Malariologia e Doenças Tropicais.

a. DEANE, L. M., ROSA, D. DA, RACHOU, R. G., MARTINS, J. S., COSTA, A., GOMES, H. M. & CARVALHO, M. E. DE, 1953.—" A filariose bancroftiana em Maceió, Alagoas: resultado de um inquérito realizado em 1952." **5** (1), 17–22. [English summary p. 22.]
b. DIAS, E., 1953.—" Estudos preliminares sôbre a esquistossomose mansoni no Município de Bambuí, Estado de Minas Gerais." **5** (3), 211–215. [English summary p. 213.]
c. AMORIM, J. P. DE, 1953.—" Infestação experimental e natural de murídeos pelo *Schistosoma mansoni*. Nota prévia." **5** (3), 219–222. [English summary p. 222.]
d. LUCENA, D. T. DE, 1953.—" Chave provisória para diagnose das espécies brasileiras de moluscos planorbídeos." **5** (3), 245–248. [English summary p. 248.]
e. DEANE, L. M., MARTINS, R. S. & LOBO, M. B., 1953.—" Um foco ativo de esquistossomose mansônica em Jacarepaguá, Distrito Federal." **5** (3), 249–252. [English summary p. 252.]
f. LOBATO PARAENSE, W. & MALHEIROS SANTOS, J., 1953.—" Um ano de observações sôbre esquistossomose em planorbídeos da Lagoa Santa." **5** (3), 253–269. [English summary p. 268.]

(650a) Maceió, the capital of the Brazilian State of Alagoas, was formerly thought to be a major focus of filariasis bancrofti. In 1952, Deane *et al.* found that only 18 out of 6,052 persons (0·3%) examined had microfilariae of *Wuchereria bancrofti* in their night blood. Eleven of these came from the district of Farol and the remaining seven from four of the other ten districts of the city. Infective larvae were found in only five out of 4,975 *Culex fatigans* dissected. Altogether about 6% of the population were examined. This result is in striking contrast to that of Coqueiro who in 1922 reported an incidence of 46·5% in Maceió. P.M.B.

(650b) In a case of intestinal schistosomiasis, granulomata containing eggs of *Schistosoma mansoni* were found in the lungs. The helminth eggs found by sedimentation tests on 1,600 stools in the Bambuí county were *S. mansoni* 9·44%, hookworm 65·25%, Ascaris 39·25%, Trichuris 8·19% and *Taenia* sp. 5·06%. Furcocercariae were present in planorbids collected from 15 of the 40 foci where snails were examined and in 4·61% of 6,349 specimens of *Australorbis glabratus*. R.T.L.

(650c) The field rats *Nectomys squamipes*, *Oxymycterus angularis* and *Holochilus sciureus* n the wooded zone of the State of Alagoas are naturally infected with *Schistosoma mansoni* nd this district has the highest rate of human infection with intestinal schistosomiasis. morim succeeded in infecting *Rattus rattus frugivorus* and *Cercomys cunicularius inermis* ollected from the district of Viçosa, Alagoas. R.T.L.

(650e) There is an active focus of *Schistosoma mansoni* in Jacarepaguá, a district of the ity of Rio de Janeiro. The faeces of two out of 119 schoolchildren and of five out of ten armers living in the district contained *S. mansoni* eggs. *Australorbis* sp. were present in he area and 0·3% of the 2,905 specimens examined contained *S. mansoni* cercariae. R.T.L.

(650f) A study of the seasonal incidence of *Australorbis olivaceus* in Lagoa Santa, a lake ituated in the State of Minas Gerais and around which schistosomiasis mansoni is known o be endemic, showed that the snail population attained its peak in October. Heavy rains in November affect the growth of the snails by disturbing the circulation of food. The higher nortality among the snails reaching a mean size of $15{\cdot}98 \pm 4{\cdot}55$ mm. is probably due to rematode infections. Specimens under 4 mm. are practically never found infected. Human nfection may occur at sites distant from the breeding places owing to the dispersal of cer- ariae through the lake by currents. R.T.L.

51—Revista Brasileira de Medicina.

a. ANON., 1953.—" Anquilostomíase sensacional." **10** (1), 40.
b. CASTRO BARBOSA, N. DE, 1953.—" Pesquisa de ovos de parasitas nas fezes." **10** (1), 49–51
c. PAULA, A. DE & RIBEIRO, H. DE P., 1953.—" Os sintéticos acridínicos no tratamento da teníase." **10** (2), 140–141.
d. MILET, J. C. C., 1953.—" Nota sobre terapêutica antimonial na esquistossomose mansônica." **10** (4), 266–268.
e. FREITAS, J. F. TEIXEIRA DE & MAYALL, R., 1953.—" Fenómeno de Raynaud na mão esquerda, provocado por *Dirofilaria spectans*." **10** (7), 463–467. [English summary p. 467.]

(651a) This is a description by the author of his infection with *Ancylostoma duodenale* n which the eosinophil level reached 20%. *Strongyloides stercoralis* was also present. He cquired the infection in Brazil but most of the observation was carried out during a visit to Germany. P.M.B.

(651c) Of 25 cases of taeniasis treated with atebrin 18 eliminated the complete worm, n two the scolex could not be found but the symptoms disappeared, and two passed fragments nly. Four vomited the drug but in one of these the complete worm was passed. P.M.B.

(651d) Milet deals with the allergic reactions to anthiomaline, which occurred during s use in the treatment of 91 cases of schistosomiasis mansoni, rather than with the thera- eutic effects of the drug. Eight intramuscular injections totalling 0·45 c.c. of anthiomaline er kg. body-weight were given over a period of 53 hours, each injection being accompanied y 1 c.c. of 1% novocaine. Allergic reactions were severe in the first group of patients, but ere reduced to negligible proportions when each day's treatment was preceded by 1 c.c. f Benadryl. Milet considers that by the use of an antihistamine the dose rate of anthiomaline n be increased to a more effective level than that used hitherto. P.M.B.

(651e) Freitas & Mayall describe a case in Brazil in which arterial obstruction resulting Raynaud's phenomenon was caused by a *Dirofilaria spectans* (which is figured) in the ft hand, and was cured by the surgical removal of the worm. This is the first record of . *spectans* in man. [The species has hitherto only been recorded from *Pteronema brasiliensis* nd *Tayra barbara*, also in Brazil.] P.M.B.

52—Revista Ceres. Minas Gerais.

*a. CÔDO, V., 1953.—" Dosagem da amilosúria em bovinos parasitados pelo *Euritrema coelomaticum*." **9**, 202–209. [English & German summaries.]

653—Revista de Ciências Veterinárias. Lisbon.

a. BORGES FERREIRA, L. D. B., 1953.—"Uma parasitose dos galináceos (a acuariose)." **48** (344), 21–28. [French summary p. 28.]
b. MURTEIRA, A. M. S., 1953.—"Algumas helmintíases dos ovinos e suínos alentejanos." **48** (346/347), 138–143. [French summary p. 143.]

(653a) *Acuaria* (*Cheilospirura*) *hamulosa* is recorded for the first time in Portugal from the gizzard of two hens. P.M.B.B.

654—Revista Clínica Española.

a. VÁZQUEZ AÑÓN, J. J., 1953.—"Quistes equinocócicos de localización cráneo-encefálica." **49** (1), 1–16.
b. GARCÍA-BARÓN, A., 1953.—"Sobre el diagnóstico de las complicaciones abdominales agudas producidas por los *Ascaris lumbricoides*." **49** (2), 98–106. [English, French & German summaries p. 106.]
c. BUYLLA, P. A., LLAVONA, J. A. & VILLARROYA, P. F., 1953.—"Un brote de triquinosis tratado con ACTH." **49** (3), 168–172. [English, French & German summaries p. 172.]

(654c) The authors point out that the spectacular results of ACTH on the temperature, eosinophilia and myalgia observed in eight cases of trichinosis is antiallergic rather than specific and that treatment must be continued until the encystment of the larvae, otherwise relapses are liable to occur. The total dosage used was relatively low and varied from 180 mg. to 780 mg. [See also No. 543a above.] P.M.B.

655—Revista del Instituto Malbrán. Buenos Aires.

a. VANNI, V., 1953.—"Nuevo método de contralor biológico de los antihelmínticos." Years 1950–53, **15** (1), 82–86.
b. VANNI, V. & FERREIRA, B. E., 1953.—"El mapa parasitológico de la República Argentina." Years 1950–53, **15** (4), 369–372.
c. VANNI, V. & MARGNI, R. A., 1953.—"El catastro de las parasitosis intestinales de la República Argentina con el método de Vanni (Provincia de Corrientes)." Years 1950–53, **15** (4), 403–409.

(655a) Vanni again reports on his new method (already published by him in 1941, 1948 and 1949) of testing anthelmintic activity by the use of colonies of *Limnodrilus*. He considers that this oligochaete is a better test animal for anthelmintics against platyhelminths and that *Turbatrix aceti* is better for those against nemathelminths. M.MCK.

(655b) Examination of 2,000 faecal samples in the province of Formosa, Argentina, gave the incidence of helminths as: *Ancylostoma duodenale* 1·6%, *Necator americanus* 0·25%, *Strongyloides stercoralis* 1% and *Enterobius vermicularis* 0·25%. The reduction in the incidence of hookworm in recent years is attributed to improvement in the sanitary conditions. R.T.L.

(655c) The fall from about 98% to 12·6% in the incidence of hookworm in the province of Corrientes, Argentina, since the survey made by Fülleborn *et al.* in 1934, is attributed to the greater measure of hygiene observed in the area. The incidence of other helminths is now *Strongyloides stercoralis* 3·6%, *Hymenolepis nana* 3%, *Trichuris trichiura* 0·6%, *Ascaris lumbricoides* 0·2% and *Taenia saginata* 0·2%. M.MCK.

656—Revista del Instituto de Salubridad y Enfermedades Tropicales. Mexico.

a. MAZZOTTI, L., 1953.—"Distribución de filarias machos y hembras en 113 nódulos de *Onchocerca volvulus*." **13** (3), 203–207. [English summary p. 206.]
b. MAZZOTTI, L. & TREVIÑO, A., 1953.—"Ensayo de tratamiento con 'dietilcarbamazina' (hetrazán) en tres casos de cisticercosis humana." **13** (3), 209–211.
c. MAZZOTTI, L., 1953.—"Desaparición de la reacción alérgica al hetrazán, en cinco casos de oncocercosis." **13** (4), 279–283. [English summary p. 283.]

d. MAZZOTTI, L., 1953.—" Supervivencia de las microfilarias de *Dirofilaria immitis* y de *Onchocerca reticulata* a la temperatura de 25°C. bajo cero." **13** (4), 289–291. [English summary p. 291.]

(656a) A total of 113 Onchocerca nodules from patients in Chiapas, Mexico, were rtificially digested. The 164 female and 96 male worms which were recovered were very regularly distributed: one female only was found in each of 37 nodules, two females only eight, and two males only in one. The highest totals in single nodules were: one with ve females and two males, another with five males and one female and two with three worms f each sex. P.M.B.

(656b) Three cases of subcutaneous cysticerciasis were treated with courses of hetrazan intervals over periods varying from about 5–18 months. In one case with four cysticerci ese all disappeared after a five months' course in which 60 mg. was given daily for 15 days, llowed by 15 days' break; in the second case, after receiving 30 mg. daily for 10 days epeated four times at monthly intervals, one of two cysticerci disappeared and the other as eventually excised but was no longer recognizable; in the third case, treated with oo mg. daily for six days, repeated once after a six months' interval and again a year later, o out of 16 cysticerci (which had first been noticed about three years previously) disappeared nd when one of those remaining was excised it was found to be still viable. P.M.B.

(656c) In three persons who had had Onchocerca nodules removed some years pre-iously and were given several courses of hetrazan, the allergic reaction to the drug gradually iminished and eventually became negative as microfilariae disappeared from the skin. Two thers who had had nodules removed some years before but had not been treated with hetrazan ventually became negative as shown by skin biopsy and showed no allergic reaction when iven 100 mg. of hetrazan. P.M.B.

(656d) When kept at a temperature of −25°C. microfilariae of *Dirofilaria immitis* sur-ived in dog's blood for a maximum of 18 days. Microfilariae of *Onchocerca reticulata* obtained ost mortem in fragments of skin from a horse were still alive after 10 days at −25°C. P.M.B.

57—Revista Kuba de Medicina Tropical y Parasitología.

a. MOURIQUAND, G., ROMAN, E. & COISNARD, J., 1953.—" Essai de traitement de l'oxyurose par la pipérazine." **9** (7/12), 33–37.
b. MOURIQUAND, G., ROMAN, E. & COISNARD, J., 1953.—" Traitement de l'oxyurose infantile par la pipérazine." **9** (7/12), 37–38.
c. BASNUEVO, J. G. & FONTAO, J. A., 1953.—" Ascariasis y dietilendiamina (piperacina)." **9** (7/12), 38–40.
d. BASNUEVO, J. G., FONTAO, J. A. & BLANCO RABASSA, E., 1953.—" Oxyuriasis y dietilendiamina (piperacina, Uricida)." **9** (7/12), 40–42.
e. BASNUEVO, J. G., LABOURDETTE, J. M., BORGES, F. & GARCÍA FAES, O., 1953.—" Veinte casos de ascariasis tratados con dietilendiamina. (Uricida, piperacina.)" **9** (7/12), 43–44.
f. BASNUEVO, J. G. & FONTAO, J. A., 1953.—" Hidrato de dietilendiamina. (Antiartrítico y antiparasitario.)" **9** (7/12), 44–45.
g. BASNUEVO, J. G., SOLER DELGADO, F. & FONTAO, J. A., 1953.—" La mezcla hexilresorcinol-tetracloroetileno sustituye ventajosamente al helecho macho en el tratamiento de la taeniasis." **9** (7/12), 48–50.
h. BASNUEVO, J. G., SOLER DELGADO, F. & FONTAO, J. A., 1953.—" Terapéutica antiparasitaria." **9** (7/12), 50–52.

(657a) [This paper is reprinted from *J. Méd. Lyon*, 1951, **32**, 189–195. For abstract e Helm. Abs., **20**, No. 229a.]

(657b) Children given piperazine hydrate in daily oral doses of 6·5 cg. to 17 cg. per year age expelled oxyurids. Less constant results are obtained with smaller doses and none e completely effective. Mouriquand *et al.* recommend 10 cg. per year of age per day dministered in three oral doses, one in the morning on an empty stomach and two between eals, together with two suppositories of 0·1 gm. of piperazine per day. Treatment should st a week and alternate with a week's rest. They established that daily doses of 2 cg. to

7 cg. per year of age given for eight days are efficient against pruritus. Trichuris is not affected by piperazine, but with the treatment described above children under three years of age expelled Ascaris. M.MCK.

(657c) Seven out of ten cases of human ascariasis were cured by diethylenediamine hydrate (piperazine) with cane sugar in aqueous solution. The dose rate was 0·3 gm. piperazine per year of age, daily for ten days. No harmful effects were observed. During treatment a two-year-old child passed 1,142 worms. M.MCK.

(657d) Twenty cases of enterobiasis were treated with diethylenediamine hydrate (piperazine) without causing any harmful reactions. Anal scrapings on to cellophane paper (Hall method) showed that 18 of the cases were cured. G.I.P.

(657e) Piperazine given in a syrup preparation at the rate of 3·6 gm. daily for ten days cured 13 out of 20 adults with Ascaris infection. G.I.P.

(657f) Basnuevo & Fontao give an account of the dosage and chemical properties of diethylenediamine hydrate (piperazine). It is a colourless crystalline substance, markedly alkaline and deliquescent. The authors give a formula [not structural] for the most stable form in which 44% is anhydrous diethylenediamine. M.MCK.

(657g) A mixture of 1 gm. of hexylresorcinol and 4 c.c. of tetrachlorethylene, administered orally in capsules or by duodenal sound for *Taenia saginata*, is practically non-toxic, keeps indefinitely and is applicable in more cases (e.g. in pregnancy, anaemia) than male fern extract, but patients under five or over sixty years of age and those with heart and kidney trouble are best treated with powdered tin which is non-toxic and can be given with sugar or honey. In these experiments the latter cured 65% to 80% of cases. *T. solium* is unknown among Cubans and the larval infection is not found in pigs. *T. saginata* is well known and is more frequent among Lebanese and Spanish residents, who eat partially cooked meat, than in the native population. M.MCK.

(657h) The dosage, toxicity, contra-indications and percentage of cures with oleoresin of aspidium, hexylresorcinol, tetrachlorethylene and tin when used as anthelmintics are briefly summarized. R.T.L.

658—Revista Médica Dominicana.

a. MARTÍNEZ LARRÉ, M. & RAVELO DE LA FUENTE, J. DE J., 1953.—"Esquistosomiásis en la República Dominicana." 8 (1), 44–49.

(658a) The streams Paña Paña and Las Guamas in the Dominican Republic were treated with sodium pentachlorophenate at 15 p.p.m. as a control measure against *Schistosoma mansoni*. Sampling at ten specified points 24 hours and three weeks later revealed no *Australorbis glabratus*, but on the 20th day small and medium-sized *A. glabratus* were observed at various places along Paña Paña, showing that the chemical did not affect the mollusc eggs. Other *Australorbis* habitats were found in the vicinity. The work of Oliveira Coutinho & Ravelo de la Fuente in 1952 is described: they examined 653 people at Hato Mayor and 65 at Las Palmillas, in the same endemic area as the streams mentioned above, and found 15·3% and 4·6% infected respectively. M.MCK.

659—Revista de Medicina do Rio Grande do Sul.

a. PRIMIO, R. DI, 1953.—"Recuperação sanitária e elevação do nível econômico da zona malarígena de Tôrres." 10 (56), 50–56.

(659a) In the State of Rio Grande do Sul, Brazil, *Necator americanus* is the most important helminth. The ova were present in the faeces of 21 out of 50, 142 out of 215 and 24 out of 60 individuals examined at different times. Ascaris was present in 32, 178 and 44 respectively. Clinical cases were to be found principally along the coast and in other sandy districts but the manifestations were not as serious as those observed in 1929. M.MCK.

660—Revista de Medicina Veterinaria y Parasitología. Caracas.

a. WETZEL, R. & VOGELSANG, E. G., 1953.—" La lucha contra la parasitosis intestinal del equino." **12** (1/4), 91–105.

b. WETZEL, R. & VOGELSANG, E. G., 1953.—" Mecanismo de acción y uso de anti-helmínticos." **12** (1/4), 107–117.

c. VOGELSANG, E. G. & POTENZA, L., 1953.—" Presencia del *Diphyllobothrium latum* (L., 1758) en Venezuela." **12** (1/4), 189–193.

d. CABALLERO Y C., E., VOGELSANG, E. G. & ZERECERO Y D., M. C., 1953.—" Fauna helmintológica venezolana. (IV). Algunos tremátodos de batracios y mamíferos." **12** (1/4), 195–208.

(660a) For the control of strongyles in horses, Wetzel & Vogelsang recommend measures including the daily removal of faeces from enclosures, land drainage, the treatment of all animals at least twice a year and of newly arrived horses and any passing more than 200 eggs per gm. of faeces. Pregnant mares should be dosed six to eight weeks before parturition and if necessary 14 days afterwards; foals should be dosed at three to five months, eight to ten months and twelve to fifteen months of age. M.MCK.

(660b) Wetzel & Vogelsang review in general terms the effects of parasites on domestic animals and the properties and uses of anthelmintics. Although the action of anthelmintics is rarely understood, some (e.g. papain) are known to dissolve the worm, some (e.g. fouadin) disturb glucose metabolism, others (e.g. miracil) interfere with the normal division of sex cells. The authors strongly recommend systematic control of helminths in all countries, if necessary enforced and financially aided on a national scale by such bodies as organizations of cattle rearers. M.MCK.

(660c) Vogelsang & Potenza record the finding of *Diphyllobothrium latum* during an autopsy on a Lithuanian immigrant in Venezuela. M.MCK.

(660d) *Echinostoma revolutum* from *Didelphis marsupialis*, and *Glypthelmins palmipedis* and *Haematoloechus lutzi* from *Rana palmipes* are redescribed and figured from Maracay, Venezuela. M.MCK.

661—Revista de Sanidad y Asistencia Social. Caracas.

a. IGNACIO BALDÓ, J., 1953.—" Manifestaciones pulmonares de la bilharziosis." **18** (1/2), 147–161.

(661a) Baldó reviews the results of 179 readable lung X-rays taken of inhabitants in the rural area of San Casimiro, Venezuela, where there is a high incidence of *Schistosoma mansoni*. The X-rays of 81 cases at Caracas, all of whom were passing *S. mansoni* eggs and some of whom had received or were receiving treatment, are described with the clinical details of a further three cases. M.MCK.

662—Revista de Sanidad e Higiene Pública. Madrid.

a. MIRÓ, E. L., 1953.—" La triquinosis ignorada en Madrid." **27** (7/8), 448–468.

(662a) Examination by compression of samples of the diaphragm, tongue and intercostal muscles of 32 cadavers in Madrid revealed one with Trichinella cysts in the diaphragm. Death in this case was due to hydatid of the liver. P.M.B.

663—Revue Coloniale de Médecine et Chirurgie. Paris.

a. VAUCEL, M., 1953.—" La thérapeutique des bilharzioses." **25** (214), 114, 116, 118, 120.

664—Revue d'Élevage et de Médecine Vétérinaire des Pays Tropicaux.

a. MORNET, P., ORUE, J. & SANE, M., 1953.—" L'ancylostomose canine à Dakar." **6** (4), 195–211.

(664a) Hookworms are common in dogs in the Dakar area, the highest rate of infection occurring during the rainy season of September and October. Although *Ancylostoma caninum* and *A. brasiliense* are both present, the former is by far the most common species. Tetrachlorethylene, at a dose rate of 0·2 c.c. per kg. body-weight, was the most satisfactory of the anthelmintics tested. S.W.

665—Revue de Médecine Vétérinaire.

a. AVELANGE, R. & HENRY, R., 1953.—" Sur un cas d'intoxication collective, chez le cheval, à la suite d'un traitement vermifuge à base de phénothiazine." **104,** 461–464.

b. DARRASPEN, E., FLORIO, R. & GUÉDOT, A., 1953.—" Electrocardiographie et strongylose cardio-pulmonaire du chien." **104,** 674–689.

(665a) Avelange & Henry report on severe phenothiazine poisoning in fifteen horses of varying ages. There was intense haematuria and haemoglobinuria. Although the recommended dosage was used, the phenothiazine was mixed with the feed and not given as a separate dose for each animal. Consequently some of the horses may have received more phenothiazine than others. All but one foal recovered after treatment. The authors make a number of recommendations to minimize the risks involved in treating horses with phenothiazine. S.W.

(665b) From observations on 16 dogs, the authors conclude that electrocardiography is a useful method of confirming the degree of heart involvement in cases of cardiopulmonary strongylosis. S.W.

666—Revue de Pathologie Générale et Comparée.

a. RANQUE, J., DEPIEDS, R. & MOIGNOUX, J. B., 1953.—" Comparaison entre les foyers actuels de filariose canine à *Dirofilaria immitis* et les anciennes zones de paludisme humain de la côte provençale." **53** (652), 1313–1316.

(666a) Endemic foci of *Dirofilaria immitis* infection in dogs in the south of France are limited to the Camargue (in the broad sense) and the region of Hyères, and correspond almost exactly to the distribution of human malarial infection there a century ago. Both are transmitted by the same vector but although malaria has been almost eradicated, filariasis in dogs remains relatively important. The authors discuss the reasons for this. S.W.

667—Revue de Zoologie et de Botanique Africaines.

a. VUYLSTEKE, C., 1953.—" Notes sur les nématodes parasites de l'éléphant d'Afrique." **48** (3/4), 213–239.

(667a) Vuylsteke lists 31 nematode species (including four new forms) in the African elephant and 23 nematode species in the Indian elephant and describes some of the African forms from the collection of the Musée Royal du Congo Belge at Tervuren, Belgium. *Quilonia crenelata* n.sp. has exceptionally long spicules measuring 1·1 mm., and a buccal ring crenellated along the anterior border; each crenellation corresponds to the intersection of two lamellae on the leaf crown. The genus *Evansia* is considered to be synonymous with *Quilonia*. *E. apiensis* is therefore transferred to *Quilonia* as a new combination. Measurements and figures are given of *Q. apiensis*, *Q. africana*, *Q. loxodontae* and of *Q. uganda* var. *buta* n.var. which is separated from *Q. uganda* on account of its larger size. *Murshidia neveulemairei* (Witenberg, 1925) var. *africana* n.var. is differentiated from the original Indian species by the cylindrical oesophagus, the much less developed circumoral rim and the far longer spicules. *Amira buta* n.sp. is differentiated from *A. sameera* and *A. straeleni* by the structure of the leaf crown, which has 36 lamellae of equal height with blunt and outwardly curved tips;

by the presence of a prebursal cuticular boss 180 μ long and by the much longer spicules (4,600 μ). *Parabronema congolense* n.sp. has cuticular folds bordering the caudal alae, longitudinal, interrupted cuticular striations on the ventral surface and two spicules measuring 5,800 μ and 550 μ. These characters distinguish it from the other African species, *P. rhodesienne* and *P. africanum*. Measurements and figures are also given for *Murshidia africana*, *M. linstowi*, *M. longicaudata*, *M. memphisia*, *Grammocephalus clathratus*, *Syngamus loxodontis*, *Leiperenia leiperi* and *Ascaridia rodhaini*. M.MCK.

668—Ricerca Scientifica.

a. CARTA, A., 1953.—" Sull 'importanza degli studi e delle ricerche nel campo della parassitologia veterinaria." **23** (8), 1331–1334. [English, French & German summaries pp. 1333–1334.]

669—Rivista Italiana d'Igiene.

a. SPENA, A., 1953.—" Les parasites et la nutrition." **13** (11/12), 433–459.

670—Rundschau für Fleischbeschauer und Trichinenschauer.

a. GOLTZ, G., 1953.—" Gefrierbehandlung von trichinösem Schweinefleisch." 5 (5), 70.

(670a) Goltz reports on American research into the use of deep freeze for destroying Trichinella larvae in pig meat. Results show that all larvae are killed when a temperature of −27 C. is maintained at the centre of the meat for 38 hours, −35°C. for 40 minutes, or −37°C. for two minutes. The method is considered to be effective but too expensive. A.E.F.

671—Rural Research in C.S.I.R.O. Melbourne.

a. ANON., 1953.—" Specific resistance of sheep to worms." No. 4, pp. 6–10.

672—Schweizerische Zeitschrift für Allgemeine Pathologie und Bakteriologie.

a. JAFFÉ, R., 1953.—" Hepatitis parasitaria." **16** (3), 537–559.
b. GRIFFITHS, R. B., 1953.—" A review of parasitism of the liver in domestic animals in the British Isles." **16** (3), 603–614.

(672a) Jaffé considers the various parasitic causes of hepatitis including those resulting from invasion of (i) the bile-ducts, e.g. by *Ascaris lumbricoides*, *Clonorchis sinensis*, *Fasciola hepatica*, *Dicrocoelium dendriticum* and *Opisthorchis felineus*, (ii) the parenchyma of the liver, e.g. hydatid, and (iii) the portal vessels, e.g. *Schistosoma* spp. R.T.L.

(672b) In this review Griffiths lays stress on the geographical distribution, pathological significance and epizootiology of some of the more important parasites which may occur in the liver of domesticated animals used as food in the British Isles. R.T.L.

673—Semana Médica. Buenos Aires.

a. NUSIMOVICH, B., PEISOJOVICH, A. & MIR, R., 1953.—"Cisticercosis." **102** (13), 414–416.
b. YODICE, A. & LE CHIARE, F., 1953.—" Hidatidosis pleural." **102** (16), 515–519.

674—Shikoku Acta Medica.

a. SHIRAKAWA, T., 1953.—[Studies on the lung-flukes. I. Report; on the distribution of metacercariae of genus *Paragonimus* in Shikoku Island, Japan.] **4** (5), 197–199. [In Japanese: English summary p. 197.]
b. MOMOSE, T., 1953.—[Studies on the treatment of paragonimiasis. (Report I.)] **4** (6), 247–253. [In Japanese: English summary p. 247.]

(674a) The crabs *Sesarma intermedia*, *S. dehaani* and *Helice tridens* caught at the mouth of the Yoshino, and Naka River in Tokushima Prefecture were free from *Paragonimus* metacercariae but *Eriocheir japonicus* were infected. In the Shimanto River in the Ehime and Kochi Prefectures there were a great many metacercariae of *P. westermanii* in *E. japonicus* but none in *Potamon dehaani*. R.T.L.

(674b) The effect *in vitro* on the movements of *Paragonimus* of a solution of ethoxy-diaminoacridine lactate was marked even in a dilution of one part in 1,600. The worms were killed in a few minutes by a temperature of 45°C. to 50°C. and when exposed for 50 minutes to ultra short waves. X-ray irradiation (6000 r) had no obvious effect. R.T.L.

675—South African Medical Journal.

a. JOSEPH, F. H., 1953.—" Concentration of parasites in stools." **27** (24), 506–508.
b. ELSDON-DEW, R., 1953.—" Housing and parasites. A comparison of slums with sub-economic housing." **27** (40), 879–880.
c. BERSOHN, I. & LURIE, H. I., 1953.—" Experimental bilharziasis in animals. II. Correlation of biochemistry ('liver function tests') and histopathological changes in the liver in early bilharziasis." **27** (43), 950–954.
d. LURIE, H. I., 1953.—" Clinical pathological findings in early bilharziasis." **27** (45), 1011–1013.
e. DE VILLIERS, P. D., 1953.—" Cerebral cysticercosis: an aspect of the diagnosis." **27** (49), 1097–1098.

(675a) A comparison of the centrifugal sedimentation process (CS) and Faust's zinc sulphate centrifugal flotation technique (ZF) revealed that the CS process of examining faeces for helminth eggs gave nearly 2·4 times as great a number of worm eggs as did the ZF technique. Using the CS technique, eggs of Taenia were found twice as often, those of *Schistosoma mansoni* 10 times as often and those of *S. haematobium* three times as often as when the ZF technique was used. The CS process overwhelmingly favoured Trichuris and Ascaris ova. When Faust's technique is employed it should be supplemented by an examination of the washed deposit or by the acid-sulphate-ether process. R.T.L.

(675b) In Durban a marked difference in the extent of parasitism among the inhabitants of a notorious slum and those of a sewered sub-economic housing scheme was revealed by single stool examinations. 78·5% of the former had helminth infections compared with 56·2% of the latter. The main difference lay in the incidence of Ascaris and Trichuris, viz., 50·3% and 60·3% in the slum inhabitants compared with 26·1% and 39·5% in the housing scheme population. R.T.L.

(675c) Bersohn & Lurie infected two healthy *Cercopithecus aethiops pygerythrus* with *Schistosoma bovis*, each with about 1,000 cercariae. They carried out weekly eosinophil counts, liver biopsies, and complement fixation and biochemical tests and discuss and tabulate their results. At the end of the fifth week, when schistosomula are developing in the portal veins, acute hepatitis developed. During the seventh, eighth and ninth weeks numerous eggs were laid in the liver, stimulating a marked giant cell reaction which resulted in phagocytosis and removal of most of the eggs. From the 13th to 17th weeks the number of eggs in the liver increased, early granulomatous lesions appeared and biochemical changes occurred, particularly a reversal of the albumin:globulin ratio and a decrease in cholesterol. At the end of the 25th week all eggs in the liver appeared to be dead but it was impossible to state whether the granulomata would resolve or progress to fibrosis. S.W.

(675d) Eight residents in Johannesburg who interrupted a journey to bathe in the Crocodile River which is known to be infested with *Schistosoma haematobium* all developed swimmers' itch and three weeks later gave positive complement fixation tests. Six showed an eosinophilia in four to seven weeks. Two did not develop an eosinophilia and received no treatment but the C.F.T. reverted to negative 31 weeks after exposure. Five cases showing eosinophilia but negative urine and faeces for schistosome eggs received nilodin, 75 mg. per kg. body-weight divided over five days. In one the eosinophilia disappeared seven weeks later and the C.F.T. became negative after 22 weeks. In the second the eosinophilia disappeared after 18 weeks and the C.F.T. was negative after 23 weeks. In the third the eosinophilia subsided after 15 weeks and the C.F.T. became negative after 28 weeks. The fourth and fifth cases still had a definite esoinophilia and a positive C.F.T. after 35 weeks. Skin tests with cercarial antigen were consistently negative before and after treatment. It is concluded that

the C.F.T. is the best for early diagnosis but that a positive reaction does not necessarily imply an active infection. That the infection was due to a non-human species of schistosome could be excluded. R.T.L.

(675e) The author draws attention to the fact that epileptiform seizures do not occur in the early stages of cerebral cysticerciasis; they are produced by cysts which have died and become surrounded by fibrosis. Diagnosis of a long-standing infection may be made more easily by a radiological examination of the thighs than by radiological examinations of the skull. S.W.

676—Spreckels Sugar Beet Bulletin.

a. MANUEL, G. D., 1953.—" Developments in nematode control." **17** (1), 6–7.

(676a) This is a brief summary of the reviews of work done on the control of sugar-beet nematode presented at a meeting of workers in this field sponsored by the Beet Sugar Development Foundation. The subjects dealt with include soil fumigation, crop rotation, resistant varieties of beet and the possibility of using hatching stimulants for control. M.T.F.

677—Svensk Frötidning.

a. HOFSTEN, C. G. VON, 1953.—" Klöverålen i Finland." **22** (12), 124–126.

(677a) Von Hofsten has found attacks by stem nematode in red clover on some farms in Finland. Stem nematode has been found only two or three times before in Finland. S.B.

678—Tea Quarterly. Tea Research Institute of Ceylon.

a. LOOS, C. A., 1953.—" The principles of pest control. IV. Eelworms." **24** (1/2), 34–38.

(678a) In Ceylon *Meloidogyne javanica* attacks tea seedlings and *M. brevicauda* mature tea. *Pratylenchus coffeae* has been reported attacking tea on 48 estates and is probably more widespread than records indicate. Control by crop rotation is not practicable with the major crop which is perennial but is possible with green manures grown as bush crops or low shade. The maintenance of high soil fertility reduces eelworm damage. Soil fumigation with D-D mixture or Dowfume N and ethylene dibromide is costly to apply to large areas but in nurseries regular fumigation can be worth while. Breeding for resistance to eelworms is a long term policy but some success has been achieved with plants resistant to *P. coffeae*. Co-operation between estates in the selection of high-yielding plants growing in areas of severely attacked and debilitated tea, and their vegetative propagation may eventually supply the needs for replanting. S.W.

679—Therapie der Gegenwart.

a. SCHMIDT, H. W., 1953.—" Zusammenfassendes über Trichinose." **92** (9), 344–345.

(679a) Schmidt briefly summarizes present knowledge on trichinelliasis with special emphasis on prophylaxis. He believes that the "natural cycle" of Trichinella infection involves foxes and badgers and to a lesser degree, wild boar. The task of prophylaxis is to prevent infection being carried into the "culture cycle" (domestic pig and man). Foxes and badgers should be skinned as far away as possible from the haunts of man and carcasses should either be inspected before being passed for human or animal consumption or should be buried at a depth of one metre. A.E.F.

680—Tierzucht.

*a. SCHRÖTER, A., 1953.—" Über die Wurmerkrankungen der Schafe." **7**, 416–417.

681—Tijdschrift voor Diergeneeskunde.

a. DORSMAN, W., 1953.—" Enkele opmerkingen over de diagnose van parasitaire ziekten." **78** (20), 882–883. [English, French & German summaries p. 883.]

682—Tomato and Cucumber Marketing Board Journal. London.

a. READ, W. H., 1953.—" Chemicals for the control of root-knot eelworm (*Heterodera marioni*)." **2** (10), 11, 13–15.

683—Transactions of the North American Wildlife Conference.

a. LONGHURST, W. M. & DOUGLAS, J. R., 1953.—" Parasite interrelationships of domestic sheep and Columbian black-tailed deer." 18th (1953), pp. 168–187. [Discussion p. 188.]

(683a) From an extensive survey of the parasites of sheep and Columbian black-tailed deer grazing the same pasture, Longhurst & Douglas found them to have 18 species of helminths in common, including *Fasciola hepatica*, tapeworms, cysticerci and nematodes. *Bunostomum trigonocephalum* and *Cooperia oncophora* occurred only in sheep; *Thelazia californiensis*, *Dictyocaulus viviparus* and *Setaria cervi* occurred only in the deer. Malnutrition due to overstocking of the pasture aggravated the parasitism and there was considerable mortality among the deer and severe debilitation of the sheep. Ostertagia, Trichostrongylus and Dictyocaulus had the most serious effects. Lambs were successfully infected experimentally with nematode larvae cultured from deer faeces. The seasonal variation of each species is discussed. Good promise or control was obtained by reducing the number of animals, supplementing their diet and treating the sheep with phenothiazine. S.W.

684—Transactions of the Royal Society of New Zealand.

a. RICHARDSON, L. R., 1953.—" Studies on New Zealand Hirudinea. Part III. *Bdellamaris eptatreti* n.g., n.sp. and notes on other Piscicolidae." **81** (2), 283–294.

(684a) *Bdellamaris eptatreti* n.g., n.sp. described and figured from *Eptatretus cirrhatus*, was collected at Cook Strait, New Zealand. It has a fully formed, abdominal somite divided into 12 annuli, eleven pairs of abdominal pulsatile vesicles and a smooth, flattened body, without lateral flanges. The testes number six. The male aperture is in segment XII. Posteriorly directed gastric caeca are absent. The largest specimen measured 35 mm. in length. A single specimen of *Branchellion parkeri* was collected by Manter from *Callorhynchus milii* and is the first to be recorded from a holocephalan fish. Other specimens were collected from skates off Cape Campbell. An unidentified leech, having affinities with the genus *Pontobdella* but lacking tubercles on the venter, was taken from an eroded rock brought to the surface at East Bar, off the Wellington Coast. R.T.L.

685—Transactions of the Royal Society of South Australia.

a. MAWSON, P. M., 1953.—" Some marine freeliving nematodes from the Australian coast." **76**, 34–40.

(685a) Nine species of marine free-living nematodes are identified from dredgings off the coast of New South Wales and from littoral collections in St. Vincent Gulf and Pennington Bay, Kangaroo Island. Five are new. *Anticomopsis gibbonensis* n.sp. differs from *A. typicus* in the position of the vulva. *Thoracostoma australe* n.sp. differs from *T. campbelli*

in the structure of the cephalic helmet, which is more or less imperforate except near the posterior edge where slit-like pores appear irregularly parallel to the margin. The ocelli are 0·15–0·2 mm. from the head. The oesophagus widens slightly in the posterior third. The vulva is 53%–58% of the body length from the head. *Pontonema hackingi* n.sp. differs from *P. papilliferus* mainly in the absence of a pre-anal cushion of setae and in the length of the male tail. *Symplocostomella johnstoni* n.sp. differs from *S. javaensis* in its length, in the position of the excretory pore and the length of the longest tooth, which is stout and pointed. *Harvey-johnstonia kartanum* n.g., n.sp. belongs to Cyatholaiminae but differs from both *Acanthonchus* and *Paracanthonchus* by the absence of lateral cuticular differentiation and the small size of the buccal tooth. From *Acanthonchus* it also differs in the presence of spines on the gubernaculum and the similarity of its pre-anal tubules. From *Paracanthonchus* it further differs in the length of the ribs of the buccal capsule. R.T.L.

686—Transactions of the Wisconsin Academy of Sciences, Arts and Letters.

a. FISCHTHAL, J. H., 1953.—" Parasites of northwest Wisconsin fishes. IV. Summary and limnological relationships." **42,** 83–108.

(686a) Data on the incidence and intensity of parasitism in fishes from the many lakes and streams of Wisconsin, which were briefly considered in an abstract published by Fischthal in 1949 [for abstract see Helm. Abs., **18,** No. 405bx], are now presented more fully. The 61 species of fish examined belonged to 17 families. The number examined, number and percentage infected and number of species of parasites found are tabulated. A second table compares the percentage of infection in the various families with those reported by earlier workers. A third table gives a check list of the 51 trematodes, 26 cestodes, 21 nematodes and 9 acanthocephalans found, and the number of species of fish infected with each. The relationship of limnological factors, physical, chemical and biological, to parasitism in fishes in the lakes and streams is separately discussed. The effects of parasitism on the fish host are generally not serious. Many other factors in the aquatic environment may lead to a misinterpretation of the results of statistical treatment but occasionally the parasites do cause serious epidemics: impairment or loss of sight caused by *Diplostomulum* prevents proper feeding, even in a hatchery; *Proteocephalus ambloplitis* is a devastating parasite causing sterility in all species of bass fish; *Pomphorhynchus bulbocolli* in the gut wall and leeches attached to the operculum result in considerable damage to *Catostomus commersonnii*. R.T.L.

687—Tuatara. Victoria University College, Wellington, New Zealand.

a. MANTER, H. W., 1953.—" *Gyrocotyle*, a peculiar parasite of the elephant fish in New Zealand." **5** (2), 49–51.

(687a) *Gyrocotyle rugosa* and *G. urna* both occur in the elephant fish, *Callorhynchus milii*, in New Zealand. Their life-histories are unknown. The eggs of *G. rugosa* which are thin-shelled, operculated and fully embryonated before deposition, hatch almost immediately in sea water. Those of *G. urna* take two weeks to hatch. The occurrence of early post-larval stages in the mucosa of the spiral valve of the definitive host suggests a direct life-cycle. R.T.L.

688—Türk Ijiyen ve Tecrübî Biyoloji Dergisi.

a. ÖZSAN, K., 1953.—" Sarkî Karadeniz bölgesinde Nekator taraması." **13** (2), 178–179. [Also in French pp. 180–182.]

(688a) Özsan reports on a survey of the incidence of hookworm in man living in the eastern coastal region of the Black Sea. About half of the population of 14 villages was examined; children under four years old and old people were not examined. The incidence varied from 0·3% to 53% with an average of 30%. Most of the villages are situated in narrow

valleys where the climate is very damp and warm and where human faeces are used for manure, thus providing ideal conditions for the dissemination of hookworm ova and development of the larvae. In the higher, drier regions hookworms are absent. S.W.

689—Türk Veteriner Hekimleri Derneği Dergisi.

a. CAN, E. & TAMER, Y., 1953.—" Hatay'ın kırıkhan ilçesinde görülen *Fasciola gigantica*'dan mütevellit distomatoz salgını hakkında." **23** (78/79), 671–675. [French summary pp. 674–675.]

b. ERGÜN, H. & MERDİVENCI, A., 1953.—" Yurdumuz çil keklik (*Perdix perdix canescens*) ve kırmızı keklik (*Alectoris graeca*) lerde ilk defa olarak bulduğumuz patojen nematod'lar." **23** (80/81), 755–762. [English summary p. 762.]

c. YASAROL, S., 1953.—" Tek ırnaklıların strongylosis ve ascariasis'ine karşı sulfure de carbone'la tetrachlorure de carbone'un phenothizazine'le müşterek kullanılması üzerine mukayeseli tecrübeler ve neticeleri." **23** (80/81), 763–773. [French summary pp. 772–773].

(689a) Can & Tamer describe an epizootic of fascioliasis gigantica which occurred in September 1952 in sheep and goats in three villages in the Kirikhan district. At the beginning of the outbreak diagnosis was only made post mortem. Lesions containing *Fasciola gigantica* were found in the liver and lungs. Treatment with carbon tetrachloride was unsuccessful but good results were obtained with Avlothane (hexachlorethane) even when the sheep were seriously ill. From their observations they consider that *F. gigantica* is far more widespread in Turkey than has been previously believed and that Avlothane is the remedy of choice. S.W.

(689b) Ergün & Merdivenci record, for the first time in Turkey, *Heterakis dispar*, *Trichostrongylus tenuis*, *Hartertia gallinarum* and *Subulura differens* from *Perdix perdix canescens* and *Alectoris graeca*. S.W.

(689c) Yasarol has tested phenothiazine, carbon disulphide and carbon tetrachloride against strongyles and ascarids in equines. 120 donkeys were treated twice, at an interval of three days, with 30 gm. of phenothiazine given by nasal-oesophageal sound; this dosage was effective against strongyles. 335 horses were treated with 20 gm. of phenothiazine on four consecutive days, given as a powder mixed with moist bran; this dosage was not effective. Four donkeys, treated twice with a mixture of 30 gm. phenothiazine and 10 c.c. carbon disulphide administered by sound with a four-day interval, were freed of strongyles and ascarids. Fifteen donkeys, given a mixture of 30 gm. phenothiazine and 30 c.c. carbon tetrachloride by sound three times at three-day intervals, were freed of strongyles but not of ascarids. Carbon disulphide, at doses of 14 c.c. for adults and 10 c.c. for foals 6–10 months old, given twice by sound with an interval of 20 days between the treatments was effective against *Parascaris equorum* in 335 horses. S.W.

690—Turrialba. Revista Interamericana de Ciencias Agrícolas.

a. TAYLOR, A. L. & LOEGERING, W. Q., 1953.—" Nematodes associated with root lesions in abacá." **3** (1/2), 8–13.

(690a) Three nematodes have been found associated with root lesions in abacá or Manila hemp (*Musa textilis* Née) in Costa Rica, Panama and Honduras. They were *Radopholus similis*, *Meloidogyne incognita* var. *acrita* and *Pratylenchus musicola* (Cobb, 1919). *P. musicola* caused more or less extensive lesions in the root cortex and the roots eventually rotted due probably to secondary invaders. Heavily attacked plants showed some evidence of arrested development. Lesions caused by *R. similis* resembled those containing *P. musicola*. *M. incognita* var. *acrita* did not cause much galling on the roots but was often found in small lesions and it obviously caused considerable damage. The infestation of abacá by *P. musicola* and *R. similis* and of two [unnamed] species of *Heliconia* by *P. musicola* are new host records. No special methods for controlling nematodes in abacá are known. J.B.G.

691—Verslagen en Mededelingen van de Plantenziektenkundige Dienst te Wageningen.

a. ANON., 1953.—" I. Ziekten en plagen in landbouwgewassen. II. Ziekten en plagen in tuinbouwgewassen. III. Uitvoering van wettelijke maatregelen." No. 120, pp. 1–117.
b. OOSTENBRINK, M., 1953.—" Historische ontwikkeling van de nematologie in Nederland." No. 120, pp. 158–165. [English summary p. 159.]
c. OOSTENBRINK, M., 1953.—" Actuele waarnemingen en meldingen op nematologisch gebied." No. 120, pp. 165–175. [English summary pp. 172–173.]
d. OOSTENBRINK, M., 1953.—" Schade bij selderie door ectoparasitaire wortelaaltjes van het geslacht *Paratylenchus* Micoletzki, 1922." No. 120, pp. 175–180. [English summary p. 179.]

(691a) In the general part of this year-book *Heterodera rostochiensis*, *Ditylenchus dipsaci* and *D. destructor* are reported from potato, *H. avenae* [*H. major*], *D. dipsaci* and non-cyst-forming eelworms [unspecified] from grain crops, *D. dipsaci* from clover and maize, *D. destructor* from bulbous iris, and *Pratylenchus pratensis* in roots of many plants. In a section dealing with the way in which statutory measures are being carried out the fight against *H. rostochiensis* is surveyed. J.B.G.

(691b) Oostenbrink surveys the historical development of nematology in Holland. He gives a list of all the literature (139 papers) which has been published in Holland up to 1952. J.B.G.

(691c) All the species of *Heterodera* previously recorded from Europe, except *H. carotae*, have been found in Holland. *Vicia ervilea* Willd. is recorded for the first time as a host of *H. göttingiana*. Mangold (*Beta vulgaris* L.) is recorded and figured as a host of *Ditylenchus destructor* for the first time; *Anchusa caespitosa* Lam. was found infested with *Aphelenchoides fragariae*. *A. blastophthorus* was found in bulbous iris for the first time. J.B.G.

(691d) The effects on celery caused by *Paratylenchus* sp. behaving as an ectoparasite are recorded and figured. Poor growth and chlorosis, poor stunted root systems showing "stubby roots" and root lesions are the characteristics of attack. J.B.G.

692—Veterinaria. Madrid.

*a. DÍAZ UNGRÍA, C., 1953.—" Estrongilosis broncopulmonar del cerdo en Venezuela." **17**, 231–248.

693—Veterinaria. Sarajevo.

a. OŽEGOVIĆ, L., 1953.—" Fenotijazin i liječenje strongiloze konja." **2** (4), 611–617. [English summary p. 611.]

(693a) Strongylosis in 150 horses was cured by phenothiazine. The total dosage was 30 gm. per horse, administered in daily doses of 2·5 gm., 6 gm. or 10 gm. When given in these small fractional doses the drug was harmless, but in two horses in poor condition 25 gm. proved toxic. G.I.P.

694—Veterinariya.

a. YAMSHCHIKOV, P. M., 1953.—[On revising the existing methods of trichinoscopy.] **30** (5), 56–57. [In Russian.]
b. STRELCHENOK, K. G., 1953.—[Non-specificity of tuberculin reactions in cattle with fascioliasis.] **30** (6), 26. [In Russian.]
c. ANDREEV, P. P., 1953.—[Disease of the withers during onchocerciasis.] **30** (6), 37–42. [In Russian.]
d. PETROCHENKO, V. I., 1953.—[Control of *Limnaea truncatula*, a vector of fascioliasis.] **30** (7), 32–33. [In Russian.]

e. TSAREV, S. G., 1953.—[Anthelmintic action of synthetic arecoline.] **30** (8), 30–31. [In Russian.]
f. FEOKTISTOV, P. I., 1953.—[Synthetic arecoline as an anthelmintic for hymenolepids in geese.] **30** (8), 31–32. [In Russian.]
g. VELICHKIN, P. A. & YAKOVLEV, S. A., 1953.—[Toxicity of phenothiazine to horses.] **30** (8), 46–49. [In Russian.]
h. VORONTSOV, S. A., 1953.—[Technical thiodiphenylamine, a new anthelmintic for haemonchiasis in sheep.] **30** (9), 30–31. [In Russian.]
i. IVANOVA, Z. I. & KHITENKOVA, L. P., 1953.—[Treatment of Moniezia in sheep with amino-acridine.] **30** (11), 58. [In Russian.]

(694a) Yamshchikov considers the usual methods used in trichinoscopy to be unreliable and has introduced a method in which the sections of muscle are immersed in glycerin, stained with two parts of 3% aqueous methylene blue and one part of 1% solution of streptocide red prepared in lactic acid and then heated to boiling point. By this method the muscle fibres are better spread and are stained from light to dark green. The parasites can be easily differentiated. By immersing the stained sections of muscle for five to eight minutes in 40% to 50% sulphuric acid and then for 15–20 minutes in saturated sugar solution it is possible to determine the form of calcification. C.R.

(694b) In this note Strelchenok mentions that cows free from tuberculosis react to tuberculin when infected with liver-fluke. C.R.

(694c) Andreev describes the aetiology of fistulous withers caused by onchocerciasis. In horses in poor condition, with infectious diseases or suffering from exhaustion, the most serious forms of clinical onchocerciasis are produced. The appearance of symptoms of onchocerciasis is always associated with the infiltration of larvae into the affected region, particularly in such conditions as wounded tissues, haemorrhages and the accumulation of lymph etc. C.R.

(694d) Petrochenko examined various types of water reservoirs for *Limnaea truncatula* and for their infection with *Fasciola hepatica* larvae. The snails were abundant in very shallow marshy areas which had seeping but stagnant water and little or no vegetation and which often dried up in summer; the percentage of infection with *F. hepatica* was very low but some snails were infected with *Cercaria stylosa*. He concludes that the area suitable for *L. truncatula* is usually limited on most farms and may lend itself to chemical control of the snails by lime or copper sulphate; spring is the best time of the year for this operation. C.R.

(694e) Tsarev used synthetic arecoline against Dipylidium in ten adult dogs and against Drepanidotaenia in 100 geese four to five months old. He obtained good results by dosing dogs with 4 mg. to 5 mg. per kg. body-weight; a dose of 2 mg. per kg. was ineffective against Dipylidium and a dose of 10 mg. per kg. was toxic. Geese were dosed with 1 ml. to 3 ml. (1 mg. to 3 mg.) per kg. as a 0·1% aqueous solution administered through a rubber tube and the drug was completely effective; a dose of 5 mg. per kg. was toxic. He also found that for ducks the therapeutic dose was 0·1 mg. to 1·0 mg. per kg. body-weight, that 4 mg. to 5 mg. per kg. was toxic and 7 mg. to 8 mg. per kg. was fatal. Arecoline also had some anthelmintic action against ascarids in dogs. C.R.

(694f) Feoktistov used synthetic arecoline against hymenolepids in 2,332 geese (1,357 goslings one to three months old and 975 adults). The dose rate was 0·0005 gm. to 0·003 gm. for young birds and 0·003 gm. to 0·005 gm. for adults, given in an aqueous solution of 1:1000. The efficacy reached nearly 100%. The birds were fasted for ten hours before treatment. C.R.

(694g) The authors comment on the toxicity of phenothiazine to horses. The horses should not be dosed from November to April. Where there are many horses needing treatment the drug should be tested on a few horses in poor condition and of little value: only when

here are no toxic symptoms should the rest of the horses be treated. Mares in foal should not be treated until after foaling. Sheep on pastures should have access to phenothiazine-salt mixture. C.R.

(694h) Vorontsov used a 10% aqueous suspension of technical thiodiphenylamine against haemonchiasis in sheep at dose rates of 15 gm. to 25 gm. for adults, 5 gm. to 7 gm. for lambs two to four months old and 8 gm. to 12 gm. for lambs five to twelve months old. This drug gave very good results in over 150,000 sheep. C.R.

(694i) When amino-acridine was given in doses of 0·15 gm. to 0·2 gm. per kg. body-weight to lambs four to five months old, its efficacy against Moniezia was 83·3%. C.R.

695—Veterinarski Arhiv.

a. WINTERHALTER, M. & DELAK, M., 1953.—" Parenteralna aplikacija tetraklormetana (carbonei tetrachloridum). I. Otrovnost tetraklormetana za bijele štakore nakon peroralne i supkutane aplikacije." **23** (9/10), 275–282. [English & German summaries pp. 281–282.]

(695a) Carbon tetrachloride mixed with liquid paraffin was three to four times more poisonous to white rats when administered per os than when injected subcutaneously at the same doses. [The English summary erroneously states that subcutaneous administration was the more poisonous.] On sectioning, the liver showed central necrosis in the lobules 48 hours after oral treatment, with heavy fatty degeneration of the cells of the healthy portions. No such degeneration was observed in the rats injected subcutaneously and lesions were less severe; regeneration, however, was slower. M.McK.

696—Veterinarski Glasnik. Belgrade.

a. CVETKOVIĆ, L., 1953.—" Slućaj nastanka kolere peradi kao posledica slabljenja organizma usled jake invazije crevnim parazitima." [Fowl cholera as a sequel to intestinal parasitism.] **7** (1), 49.
b. MEKULJI, E., 1953.—" Prilog poznavanju cisticerkoze svinja." [Incidence of cysticerciasis in pigs.] **7** (1), 52.
c. ŠIBALIĆ, S. & CVETKOVIĆ, L., 1953.—[The influence of dehelminthisation with Antihelmin for poultry I and II to the laying of eggs.] **7** (2), 95–98. [In Serbian: English summary p. 98.]
d. NEVENIĆ, V. & ŠIBALIĆ, S., 1953.—"Prilog poznavanju rasprostranjenosti plućnih parazita svinja." **7** (3), 179–181. [French summary p. 181.]
e. NEVENIĆ, V., 1953.—" Helminti pasa na teritoriji pojedinih mesta narodnih Republika Makedonije, Srbije i Crne Gore." **7** (4), 235–241. [French summary pp. 240–241.]
f. JOVANOVIĆ, A. M., 1953.—" Upotreba fenotiazina kod dehelmintizacije konja." **7** (7), 393–397. [English summary p. 397.]
g. TEŠIĆ, D., 1953.—" Rendgenska slika plućnog ehinokoka kod domaćih preživara." [The radiological features of pulmonary hydatid cysts in ruminants.] **7** (7), 412–415. [French summary p. 415.]
h. VELIMIROVIĆ, S., 1953.—[*Cysticercus cellulosae.*] **7** (7), 418–421. [In Serbian: French summary p. 421.]

(696d) Autopsies on 2,525 pigs from different regions of the Serbian Republic revealed that the incidence of adult lungworms was 27·83%. *Metastrongylus elongatus* occurred in 23·6% and *Choerostrongylus pudendotectus* in 18·43%. R.T.L.

(696e) Twenty species of helminths were recovered from 583 stray dogs from Serbia, Macedonia and Montenegro. Only eight of these species were found in all these Republics and they included the two commonest forms *Uncinaria stenocephala* with an incidence of 78% and *Dipylidium caninum* with an incidence of 56%. *Taenia multiceps* and *T. serialis* were not present in the dogs but they do occur in Yugoslavia as their larvae were found in slaughtered goats. M.McK.

(696f) Clinical, blood and faecal examinations of 21 army horses, four to eight years old, showed that phenothiazine could be given without causing clinical injury and that the horses could be kept at work during treatment. The dosage was 25 gm. given orally either as a single dose or as 10 gm. for two days and 5 gm. on the third day. All the horses treated with the German product showed an increase in erythrocytes and 58% showed a decrease in haemoglobin; in all those treated with the English product the erythrocytes were decreased and in 56% the haemoglobin was reduced. With both products the neutrophils were decreased. The treatment was fully effective against strongyles in 64% of the cases. R.T.L.

(696h) *Cysticercus cellulosae* was present in 418 of the 15,259 pig carcasses examined in Serbia during a period of seven years from 1941. The infection was heavy in 363 and light in 50. R.T.L.

697—Vie et Milieu. Paris.

a. GERLACH, S. A., 1953.—" Les nématodes marins libres des eaux souterraines littorales d'Esposende (Portugal)." **4** (1), 83–94.
b. GERLACH, S. A., 1953.—" Nouveaux nématodes libres des eaux souterraines littorales françaises." **4** (1), 95–110.
c. THÉODORIDÈS, J., 1953.—" Statistique du parasitisme par helminthes chez *Miniopterus schreibersi* Natt. (Cheiroptera Vespertilionidae)." **4** (1), 127–129.
d. DEBOUTTEVILLE, C. D., 1953.—" La faune des eaux souterraines littorales des plages de Tunisie." **4** (2), 141–170.
e. GERLACH, S. A., 1953.—" Nématodes marins libres des eaux souterraines littorales de Tunisie et d'Algérie." **4** (2), 221–237.

(697a) Gerlach gives short descriptions of 16 species of free-living eelworms from the Portuguese coast including *Enoplolaimus robustus* n.sp., *Thoönchus inermis* n.sp., *Paracyatholaimoides multispiralis* n.g., n.sp. of which only measurements are given at present, and *Procamacolaimus acer* n.g., n.sp. which is distinguished from *Camacolaimus* by the presence of tubiform, pre-anal organs. R.T.L.

(697b) Six new marine eelworms found on the Mediterranean coast of France are briefly described, viz., *Eurystomina filispiculum* n.sp., *Kraspedonema octogoniata* n.g., n.sp., *Drepanonema simplex* n.sp., *Diplopeltula intermedia* n.sp., *Sphaerocephalum hirsutum* n.sp. and *Theristus monstrosus* n.sp. R.T.L.

(697c) The helminths found in 36 bats (*Miniopterus schreibersi*) from the Pouade Grotto, near Banyuls, were *Litomosa filaria* (58·3%), *Molinostrongylus ornatus* (55·5%) and *Lepoderma vespertilionis* (30·5%). R.T.L.

(697d) Debouteville has studied the physical and chemical properties and the fauna of the subterranean waters of the littoral zone of the beaches on the Tunisian coast. He lists the free-living nematode species found; these were identified by Gerlach who describes a number in more detail in the same journal. [For abstract see No. 697e below.] S.W.

(697e) Gerlach lists the points on the Tunisian and Algerian coasts from which Debouteville sent him samples of marine nematodes. The species are tabulated under the locality in which they were found and six forms are described and figured as new. These are *Mesacanthion longispiculum* n.sp., *Chaetonema vicinum* n.sp., *Synonchium depressum* n.sp., *Chromaspirina pellita* n.sp., *Prochromadorella tenuicaudata* n.sp. and *Pterygonema alatum* n.g., n.sp. Of the 90 species listed, 21 are shown to be common to the subterranean waters of the littoral zone of the European Mediterranean coast. S.W.

98—Virginia Journal of Science.

†a. POTTER, M., 1953.—" The use of the 24 hour egg count in the evaluation of paragonimiasis." **4** (4), 226–227.

†b. DOUGLAS, L. T., 1953.—" The spermatogenesis of two hematotaeniid [nematotaeniid] cestodes." **4** (4), 231–232.

†c. HOLLOWAY, Jr., H. L., 1953.—" Notes on the occurrence of *Neoechinorhynchus cylindratus* in fishes of Westhampton Lake." **4** (4), 232.

(698b) Douglas has studied spermatogenesis in two undescribed species of the ematotaeniidae. Immediately preceding prophase of the first maturation division about 5 spermatogonia fuse to form a cytophoric syncytium; maturation of all spermatocyte nuclei a cytophore is simultaneous. The spermatid nucleus elongates and appears filamentous the mature spermatozoon. S.W.

(698c) Holloway concludes that although *Neoechinorhynchus cylindratus* is found in ercidae and also in Centrarchidae other than *Micropterus salmoides*, this species is the natural efinitive host. In other fish the adjustment between host and parasite is less perfect. S.W.

99—Vlugschrift voor de Landbouw. 's-Gravenhage.

a. GROOTENHUIS, G., 1953.—" De bestrijding van wormziekten bij het paard." No. 30, 6 pp.

(699a) Grootenhuis gives a short popular account of strongylosis and ascariasis in horses ith special reference to prevention. A.E.F.

00—West Indian Medical Journal.

a. JELLIFFE, D. B., 1953.—" Notes on the modern treatment of intestinal helminths." **2** (3), 193–204.

b. GUILBRIDE, P. D. L., 1953.—" Veterinary public health. The importance of animal disease to public health in the Caribbean with special reference to Jamaica." **2** (3), 205–223.

(700b) Guilbride collates published information on the parasites common to man nd animals in the Caribbean. He remarks on the limited occurrence of *Taenia saginata*, *. solium*, *Echinococcus* and *Trichinella* in this region and the high incidence of *Fasciola hepatica* n man in Cuba. He gives a useful table (adapted from Wright, 1947) of their animal reservoirs, istribution and frequency. R.T.L.

01—Wiener Klinische Wochenschrift.

a. BOLLER, R., 1953.—" Zur Klinik und Therapie der Darmparasiten." **65** (20), 373–376.

(701a) Boller gives brief descriptions of the more important intestinal parasites of man ncluding hydatid, Ascaris, Trichuris and Enterobius. He summarizes current methods of iagnosis and treatment. A.E.F.

02—Wiener Medizinische Wochenschrift.

a. GREIF, S., 1953.—" Keratinolytische Therapie bei Nematoden-Infektionen." **103** (35/36), 681–682.

b. KREPLER, P. & LEIXNERING, L., 1953.—" Erfahrungen mit der Nematolytbehandlung bei Kindern." **103** (45), 851–852.

(702a) After a year's experience Greif is able to report favourably on the treatment of scariasis and enterobiasis with Nematolyt. [No details of the number of cases treated are iven.] Against Enterobius a second treatment after an interval of from four to eight weeks recommended. Success is also reported against Trichuris infection after up to three doses f Nematolyt. The drug was in all cases well tolerated. A.E.F.

Abstract of paper presented at the 31st Annual Meeting of the Virginia Academy of Science, May 6–9, 953.

(702b) Krepler & Leixnering report on their use of Nematolyt in the treatment of helminth infections in children. Of 30 cases of enterobiasis, 20 were cured (14 after a single dose, 6 after two doses); of 20 cases of ascariasis, 14 were cured (10 after one dose, four after two). Five of the ascariasis patients were also infected with Trichuris but in only one of these was Nematolyt successful. No side effects were noticed. A.E.F.

703—Wiener Tierärztliche Monatsschrift.

a. WETZEL, R., 1953.—" Wirkungsmechanismus und Einsatz von Wurmmitteln." **40** (10), 577–584.
b. ANSCHAU, M. & EXNER, H., 1953.—"Über die Entwicklungsfähigkeit der *Ascaris megalocephala*-Eier unter natürlichen Bedingungen und nach Hühnerdarmpassagen." **40** (10), 612–619. [English, French & Italian summaries p. 618.]
c. WICKINGEN, H., 1953.—" Trichinose bei einem Bären." **40** (12), 728–730.

(703a) In this lecture to the Veterinary Society of Vienna, Wetzel gives a general survey of the present position with regard to anthelmintics with special reference to domestic animal helminthiases. He discusses the testing of new substances; the importance of relating treatment to the bionomics, life-history and physiology of the parasites; and host-parasite relationships. As examples of systematic treatment, in which both the biology of the parasites and the economic condition were studied, Wetzel describes briefly the treatment of liver-fluke in a herd of cattle and of strongylosis in horses. A.E.F.

(703b) Anschau & Exner's experiments with *Parascaris equorum* show that ova were passed in the faeces of fowls over a period of from 4 hours to 48 hours after feeding with adult worms. When infected faeces were incubated at 22°C. and 30°C. infected larvae developed from 78% of ova in two weeks. When dead adult worms were kept under favourable conditions 83% of the ova contained in them developed to infective larvae within five weeks. The authors stress the risk of worms passed by infected horses becoming a source of further infection. A.E.F.

(703c) Wickingen describes a case of trichinelliasis in a bear from a Salzburg menagerie. The symptoms were loss of appetite, diarrhoea and steadily increasing stiffness of neck and legs. The bear was eventually destroyed and a post-mortem revealed a heavy infection with Trichinella larvae, some of which were coiled up but not encapsulated. Rats are assumed to have been the source of infection. This is said to be the first record from Salzburg of Trichinella in an animal. A.E.F.

704—Wissenschaftliche Zeitschrift der Karl-Marx-Universität Leipzig.

a. NICKEL, S., 1953.—" Forschungsauftrag Schafhelminthen—ein Beispiel für die praktische Durchführung einer parasitologischen Forschungsaufgabe." Year 1952–53, No. 7/8 (Mathematisch-naturwissenschaftliche Reihe No. 4/5), pp. 441–444.

(704a) Nickel describes the setting up of a laboratory for the study of sheep helminths on Hiddensee, an island just off the Pomeranian coast. The laboratory (which was commissioned by the East German government in 1951) is an out-station of the University of Leipzig Institute of Parasitology. Early difficulties in securing the co-operation of the many sheep owners on the island were gradually overcome. A preliminary survey has revealed the presence of the following sheep helminths: *Haemonchus contortus*, *Ostertagia ostertagi*, *O. circumcincta*, *Nematodirus filicollis*, *Cooperia curticei*, *Chabertia ovina*, *Trichuris ovis*, *Moniezia expansa*, *Muellerius capillaris*, *Protostrongylus rufescens*, *Dictyocaulus filaria* and *Cysticercus tenuicollis*. Trematodes have not yet been recovered although the author recalls that in earlier years *Fasciola hepatica* had been found on the island repeatedly. A.E.F.

705—Wissenschaftliche Zeitschrift der Martin-Luther-Universität Halle-Wittenberg.

a. HARTWICH, G., 1953.—" Vergleichende mikroskopisch-anatomische Untersuchungen über den Kopfbau einiger Ascariden." **1** (4), Mathematisch-naturwissenschaftliche Reihe Nr. 3, pp. 71–83.

b. HARTWICH, G., 1953.—" Von *Hystrichis tricolor* Dujardin, 1845 (Nematoda, Dioctophymoidea) erzeugte Geschwülste am Drüsenmagen einer Stockente." **2** (1), Mathematisch-naturwissenschaftliche Reihe Nr. 1, pp. 59–61.

c. KITTEL, R. & KÄMPFE, L., 1953.—" Organgewichte und Parasitenbefall bei *Gadus morrhua*, *Gadus aeglefinus* und *Sebastes viviparus*." **2** (8), Mathematisch-naturwissenschaftliche Reihe Nr. 4, pp. 471–475.

d. KÄMPFE, L., 1953.—" Untersuchungen zur Zystenbildung bei *Heterodera schachtii* Schmidt (Nematodes)." **2** (11), Mathematisch-naturwissenschaftliche Reihe Nr. 6, pp. 867–902.

e. HARTWICH, G., 1953.—" *Gordiorhynchus freundi* n.sp. (Acanthocephala, Polymorphidae) aus dem Seketär (*Sagittarius serpentarius* Miller)." **2** (11), Mathematisch-naturwissenschaftliche Reihe Nr. 6, pp. 917–919.

(705a) Hartwich summarizes earlier work on the head structure of ascarids and presents the results of his own micro-anatomical studies on the heads of *Ascaris lumbricoides*, *Parascaris equorum*, *Toxascaris leonina*, *Porrocaecum ensicaudatum*, *P. decipiens*, *Contracaecum spiculigerum* and *Ascaridia columbae*. He concludes that the form of the lips, which gives the head its characteristic appearance, is dependent on the shape of the fleshy part whose tissue consists of a relatively small number of large cells. A.E.F.

(705b) Hartwich describes two tumours which were found post mortem in the proventriculus of a duck, *Anas platyrhynchos*. Specimens of *Hystrichis tricolor* were isolated from each tumour. A.E.F.

(705c) Kittel & Kämpfe report on their study of the weight (total, and of individual organs) and helminth parasites of specimens of *Gadus morrhua*, *G. aeglefinus*, *Sebastes viviparus* and *Anarhichas lupus* caught in the Barents Sea in 1952. "*Ascaris capsularia*" was the most commonly found parasite while *Contracaecum rigidum*, *Bothriocephalus rugosus* and *Echinorhynchus gadi* were also reported from some specimens. A.E.F.

(705d) Kämpfe records in detail the results of his studies on cyst formation in the beet eelworm *Heterodera schachtii*. He shows that cyst formation takes place more rapidly when mature white females are free than when they are attached to roots. Premature removal of the female from the root leads to "emergency" development in which the changes in the integument take place more rapidly than those in the eggs. The possibility of an influence of light on the formation of the cyst cannot be excluded. Cyst formation takes place more quickly at temperatures of 25°C. than in temperatures nearer freezing. Development of dormant cysts is possible at about 0°C. Since the development of eggs depends primarily on temperature while cyst formation is influenced by other factors, there is no correlation between the two. Colouring of the integument can proceed after death, probably due to decomposition of protein. Cyst formation under normal conditions is related to an increasing attraction between host and parasite. Keratin-dissolving enzymes had no effect on ova, larvae or cyst shell of *Heterodera schachtii*. Oxygen is necessary for cyst formation: high oxygen content of the medium leads to rapid cyst formation while hydrogen causes delay. Cyst formation runs parallel to the colour changes of the integument. In addition to the implication of a polyphenoloxidase discovered by Ellenby, protein or plasma decomposition may also encourage cyst formation. There is a relationship between the colour change mechanism of *H. schachtii* and that of insects. A.E.F.

(705e) Hartwich describes and figures *Gordiorhynchus freundi* n.sp. from a specimen of *Sagittarius serpentarius* in the Halle Zoological Gardens (country of origin, the Kikuyu District north of Nairobi). The new species differs from *G. clitoridius* in body length, in the number of longitudinal hooks, in the shape of the terminal appendix in the male, and in the shape of the testes. A.E.F.

706—World's Poultry Science Journal.

a. OYTUN, H. S., 1953.—" Gizzard worm (*Streptocara pectinifera*) reported in fowls in Turkey." **9** (3), 215.

707—Yokohama Medical Bulletin.

a. HARADA, F., 1953.—" Investigations of hookworm larvae. II. On the lateral migration of infective larvae." **4** (5), 288–293.

(707a) Harada prepared an agar plate 76 cm. in diameter and placed 1,000 to 2,000 infective larvae of *Ancylostoma caninum* in the centre. When kept for 24 hours at 11°C. to 11·5°C. the larvae migrated laterally for as much as 14 cm. although most remained from 2 cm. to 4 cm. from the centre. At 28°C. to 29°C. the maximum number of larvae were found from 4 cm. to 6 cm. from the centre although some had travelled as much as 36 cm. No migration took place on dry plates. When particles of sand were placed on the agar or it was scored with a knife, the larvae climbed these and did not migrate further. S.W.

708—Zeitschrift für Morphologie und Ökologie der Tiere.

a. MENGERT, H., 1953.—" Nematoden und Schnecken." **41** (4), 311–349.
b. GERLACH, S. A., 1953.—" Die biozönotische Gliederung der Nematodenfauna an den deutschen Küsten." **41** (5/6), 411–512.
c. MEYL, A. H., 1953.—" Beiträge zur Kenntnis der Nematodenfauna vulkanisch erhitzter Biotope. I. Mitteilung. Die terrikolen Nematoden im Bereich von Fumarolen auf der Insel Ischia." **42** (1), 67–116.
d. MEYL, A. H., 1953.—" Beiträge zur Kenntnis der Nematodenfauna vulkanisch erhitzter Biotope. II. Mitteilung. Die in Thermalgewässern der Insel Ischia vorkommenden Nematoden." **42** (2), 159–208.

(708a) Mengert has carried out a survey of the nematodes found in association with slugs, the material coming principally from south-west Germany. About 1,300 slugs belonging to twelve species were examined and 30 nematodes species were found, of which 23 were free-living. Three nematodes (*Rhabditis papillosa*, *R. caussaneli* and *R. neopapillosa* n.sp.) were found as dormant larvae in the body-cavity of slugs, where they neither fed nor developed. The larvae of *R. neopapillosa* are easily distinguished from those of *R. papillosa* by their greater size and strength and the adults by differences in the morphology of the tail. *Alloionema appendiculata* larvae were found as facultative parasites in *Arion* spp. A new genus, *Limaconema*, is created for *Angiostoma limacis* Dujardin, 1845 and two new species, *L. dentifera* n.sp. and *L. stammeri* n.sp., are placed in the same genus which is allocated to the Cosmocercinae Railliet; *Limaconema* is distinguished from other genera of this subfamily by the possession of fairly strongly developed caudal alae and eight or nine papillae in the male; all three species were parasitic in the intestine of *Arion* spp. and *Limax* spp. *Limaconema dentifera* lacks a chitinized cheilostome and in *L. stammeri* the tail ends in a sharp point. All the new species and some of the known ones are described and figured. A.E.F.

(708b) During the period from spring 1948 to autumn 1951 a survey of the marine nematodes of the coastal areas of Schleswig-Holstein (including Kiel Bay) was carried out and 188 species were found of which 22 were new (these have already been described elsewhere). Gerlach now describes the various biotopes found and lists the predominant species in each area. There is also a complete list of the nematodes arranged under families. A.E.F.

(708c) In this first of his series of papers on the nematode fauna of the volcanic island of Ischia, Meyl deals with terricolous species found in the fumaroles. Of the 49 species found the following are new forms: *Rhabditis inarimensis* n.sp., *Cephalobus buchneri* n.sp., *C. thermophilus* n.sp., *Pratylenchus pratensis* var. *tenuistriatus* n.var., *Aphelenchoides minimus* n.sp., *Monhystera aenariensis* n.sp., *Dorylaimus brunettii* n.sp., *D. buchneri* n.sp., *Xiphinema italiae*

n.sp., and *Acrobeloides bütschlii* var. *conilabiatus* n.var. The biotopes in which the nematodes were found are described in detail: most of the worms were living in temperatures between 30°C. and 42°C. but a few species survived at temperatures of up to 46·3°C. A.E.F.

(708d) Meyl continues his study of the free-living nematodes of Ischia with an account of species recovered from six hot springs (temperatures of from 17°C. to 75°C.). Of the 37 species found the following are new: *Rhabditis boettgeri* n.sp., *Diplogaster isolae* n.sp., *Monhystera thermophila* n.sp., *Dorylaimus goffarti* n.sp., *D. thermophilus* n.sp. and *D. parathermophilus* n.sp. Springs with a temperature of over 47°C. were completely free of nematodes; only four of the species recovered were living at over 35°C. The oecology of the worms is discussed fully. A.E.F.

709—Zeitschrift für Tropenmedizin und Parasitologie.

a. VOGEL, H. & MINNING, W., 1953.—"Über die erworbene Resistenz von *Macacus rhesus* gegenüber *Schistosoma japonicum*." 4 (4), 418–505. [English summary p. 504.]
b. KAJAHN, E., 1953.—"Ankylostomiasisbeobachtungen in Nord-Iran." 4 (4), 506–509. [English summary p. 509.]
c. JIRINA, K., 1953.—"Die Bedeutung der Maüsecysticercose für Laboratoriumsversuche." 4 (4), 510–512.

(709a) Rhesus monkeys experimentally infected with *Schistosoma japonicum* were kept under observation at the Bernhard-Nocht Institute in Hamburg for periods from several months to nearly ten years. In all 16 monkeys were used in the investigations during which the clinical course was carefully observed. Haematological examinations and serum tests were made frequently and finally at autopsy the number, size and location of the worms and the pathological changes were recorded. The number of eggs passed in the faeces was determined as an indication of the severity of the resulting infection as well as of the development of resistance. The monkeys were exposed either to a single infection with several hundred cercariae or to repeated infections with about 25 cercariae at monthly intervals. Following an initial infection with cercariae of both sexes, the number of eggs in the faeces increased and then slowly diminished. There was partial resistance to a challenging infection after ten or more months and complete resistance after 14 or more months. Complete resistance was assumed when massive and ordinarily fatal superinfections failed to increase the low number of eggs passed as a result of previous infections. In three monkeys, each exposed to 25 cercariae on 13 to 17 occasions at monthly intervals, the output of eggs was markedly diminished nine to twelve months later in spite of continued exposure. Attempts failed to produce active immunity by ingesting dead worms, or passive immunity by injections of serum from a resistant animal. Two monkeys were exposed to 1,628 and 2,405 male cercariae only: one developed partial and the other complete resistance to challenging infections with cercariae of both sexes. This shows that resistance may develop in the absence of eggs. A resistant monkey apparently freed from residual worms was treated with tartar emetic and then exposed to seven strong superinfections but no eggs or miracidia could be detected during the following 6½ years. Apparently, once acquired, resistance outlasts the presence of living worms in the body. Five highly resistant monkeys were massively superinfected and autopsied 4, 7, 10 and 26 days later. After 4 days a few cercariae surrounded by eosinophil cells were found in sections of the exposed skin. After 4 and 7 days there were numerous small infiltrates of eosinophils in the lungs resembling egg tubercles, but each containing a schistosomulum. None was found in the autopsies made 10 and 26 days after infection. A very few schistosomula were recovered from the portal system of the liver on the 7th and 10th days but not on the 4th and 26th days. The small haemorrhages in the lungs and gastric mucosa which are usually considered to be typical traces of normal migration could not be found in these resistant monkeys. This suggests that the schistosomula are arrested and destroyed in the lung capillaries or arterioles. Complement fixation tests were always positive for a certain period but could not be correlated with egg counts or with the rise of resistance. Eosinophilia did not parallel egg elimination. R.T.L.

(709b) *Ancylostoma duodenale* infections are prevalent in the inhabitants of the district of Ramsar in northern Iran. *Necator americanus* was not found. Five cases of infection with *Trichostrongylus* were observed. Haemoglobin estimations which ranged from 20% to 45% in 24 patients are tabulated. R.T.L.

(709c) To illustrate the error liable to occur in toxicity tests with various substances if infected laboratory animals are used, the results of tests with 16 substances on uninfected mice and on mice with *Cysticercus fasciolaris* in the liver are tabulated. However it is pointed out that the small number of mice used in certain of the tests renders some of the results of little significance; also variations of under 20% may be considered as lying within the range of biological error. P.M.B.

710—Zeitschrift für die Zuckerindustrie.

a. GOFFART, H., 1953.—" Zur Lebensweise und Bekämpfung des Rübennematoden (*Heterodera schachtii*) in Westdeutschland." **3** (6), 229–231. [English & French summaries p. 229.]

(710a) Goffart reviews the distribution of sugar-beet eelworm in Western Germany. The results of pot experiments show how the rate of increase in numbers of cysts depends on the initial infestation: with initial inocula of 1, 2, 3, 5, 10, 20 and 50 cysts per pot in which one sugar-beet plant was grown the mean numbers of cysts produced were respectively 1,641, 1,209, 1,063, 1,324, 1,826, 2,050 and 2,162. Infestation is reduced by 40% each year that a host plant is not grown. Careful experiments indicate that crossing does not occur between *Heterodera schachtii* and *H. rostochiensis*. Appreciable control of beet eelworm resulted from the use of D-D mixture, chloropicrin and Systox, but they are not economical for large areas. The only control which can be recommended is crop rotation, and soil should be tested for the presence of cysts at least before each beet crop. M.T.F.

711—Zentralblatt für Bakteriologie, Parasitenkunde, Infektionskrankheiten und Hygiene. Abteilung 1. Originale.

a. BOECKER, H., 1953.—" Neuere Untersuchungen an der Oxyuriasis." **160** (1/5), 296–299.

(711a) The view has been expressed that Enterobius only penetrates the intact mucous membrane after death of the host: this is based on the fact that the tissue surrounding the body of the worm, when examined after the host's death, usually shows no signs of inflammation. By a series of experiments with *Passalurus ambiguus* in rabbits, Boecker has been able to show that oxyurids (both larvae and adults) can penetrate the intact mucous membrane of the intestine *intra vitam* without giving rise to inflammation. A.E.F.

712—Zentralblatt für Chirurgie.

a. KLAVEHN, H., 1953.—" Doppelter Gallensteinileus und verkalkte Echinokokkuszyste." **78** (26), 1075–1080.
b. STRUPPLER, V., 1953.—" Zur Behandlung des Leberechinokokkus." **78** (36), 1534–1541.
c. TJIU, F. D. & CHEN, C. S., 1953.—" Schistosomiasis japonica cerebri: Bericht über einen operativ behandelten Fall." **78** (47), 1985–1991.
d. KLOSS, K. & RUCKENSTEINER, E., 1953.—" Über 35 Jahre beobachtete Heilung nach Exstirpation eines zerebralen Echinokokkus durch v. Haberer." **78** (47), 1991–1996.

(712c) Tjiu & Chen describe a case of schistosomiasis japonica in a 26-year-old Chinese male. The patient was operated on for "brain tumour" and a large granulomatous tumour was removed from the right occipital-parietal region. In the diseased tissue many schistosome eggs with abscess and granuloma formation were found. The patient was discharged free from symptoms after three weeks. This is reported to be the first case of schistosomiasis japonica of the brain in a Chinese treated surgically. A.E.F.

13—Zoologica Poloniae.

a. JANISZEWSKA, J., 1953.—" Some Adriatic sea fish trematodes." **6** (1), 20–48. [Polish summary p. 20.]

b. JANISZEWSKA, J., 1953.—" *Caryophyllaeus brachycollis* n.sp. from ciprinoid fishes." **6** (1), 57–68. [Polish summary p. 57.]

(713a) From a study of trematodes of marine fish in the vicinity of Split, Janiszewska eports *Derogenes latus* n.sp. from the intestine of *Mullus barbatus*. Of the Adriatic species resembles most closely *D. ruber*, but differs from it in measurements, host and location. he measurements and, in some cases, brief descriptions are given of *Helicometra fasciata* r which *Dentex dentex* is probably a new host, *Cainocreadium labracis*, *Opechona bacillaris*, . *polonii*, *O. orientalis* (which is reported for the first time outside the Pacific), *Lecithochirium foviride*, *L. conviva*, *Sterrhurus fusiformis*, *Lecithocladium excisum*, *Ectenurus lepidus*, *nisocladium gracile*, *A. fallax*, *Anisocoelium capitellatum*, *Acanthostomum imbutiforme*, *aplocladus typicus* and *Prosorhynchus crucibulum*. *Podocotyle pedicillatum*, *Aphallus tubarium* ound in the new hosts *Scomber japonicus* and *Morone labrax*), *Opecoeloides furcatus* and *letadena depressa* are figured and fully redescribed. M.MCK.

(713b) *Caryophyllaeus brachycollis* n.sp., yet another new species separated from the d collective species *C. laticeps* (Pall.), has an extremely short neck and a conical outgrowth changeable shape on the anterior tip of the scolex. The testes and vitellaria reach about e same level anteriorly. When in motion the head undergoes less complicated folds than *C. laticeps*. The new species is found in the cyprinoid fishes *Barbus barbus*, *B. petenyi*, *qualius cephalus* and *Leuciscus idus* in rivers of central Europe. The procercoid is described om *Limnodrilus udekemianus*. The structure of the procercoid head and its changes in shape uring motion are considered the most reliable criteria for identifying early larval Caryo- ayllaeidae. Janiszewska considers that the specificity of caryophyllids is not as strict as pposed by Szidat. The author found *C. laticeps* sensu stricto in *Leuciscus idus* as well as in e normal host *Abramis brama*; *Caryophyllaeides fennica* in *Barbus barbus*, *B. petenyi*, *Squalius phalus* and *Leuciscus rutilus*; *Khavia baltica* in *B. barbus* and *Tinca tinca*, and *Biacetabulum pendiculatum* in *T. tinca*, *Barbus barbus* and *A. brama*. M.MCK.

14—Zoologische Garten (Der). Leipzig.

a. KREIS, H. A., 1953.—" Beiträge zur Kenntnis parasitischer Nematoden. XIII. *Skrjabinaria heteromorpha* n.sp. (Filarioidea Weinland 1858; Stiles 1907) aus dem Seehund (*Phoca vitulina* L.)." **20** (2/3), 108–113.

(714a) *Skrjabinaria heteromorpha* n.sp. is described from the right ventricle of *Phoca ulina* from the North Sea. It differs from *S. spirocauda* in having tooth-like cuticular ickenings at the anterior end of the oesophagus, in the ratio of the length of the glandular that of the muscular part of the oesophagus (1:1 in the female, 2·5:1 in the male), in the sition of the vulva and in possessing four pairs of pre-anal and five pairs of post-anal papillae. G.I.P.

15—Zoologische Jahrbücher. Abteilung für Allgemeine Zoologie und Physiologie der Tiere.

a. NEUHAUS, W., 1953.—"Die Schwimmbewegungen der Cercarie von *Trichobilharzia szidati*." **64** (3), 323–331.

(715a) Neuhaus has studied, by means of a film, the swimming movements of *Tricho- harzia szidati* cercariae. He finds that movement originates from the trunk of the tail, ile the body of the cercaria and the tail bifurcations remain largely passive. The cercariae im more often backwards although they also swim forwards. The paper is illustrated by a ies of photographs enlarged from the film. A.E.F.

716—Zoologischer Anzeiger.

a. HASE, A., 1953.—" Merkwürdiges Massenauftreten von bodenbewohnenden Nematoden an der Oberfläche." **151** (7/8), 119–126.
b. KINNE, O. & GERLACH, S. A., 1953.—" Ein neuer Nematode als Kommensale auf Brackwassergammariden, *Gammarinema gammari* n.g. n.sp. (Monhysteridae)." **151** (7/8), 192–203.
c. ALLGÉN, C. A., 1953.—" Die Pelagonemen der Schwedischen Südpolar-Expedition (1901–1903)." **151** (11/12), 316–322.

(716a) Three months after a mixture of meat mould, sawdust, coffee grounds, compost, cheese, and dead mice and guinea-pigs had been placed in flower pots as a breeding ground for flies needed for experimental work, Hase noticed a white growth on the surface of the mixture in some of the pots. This was in the form of small clumps and ropy strands and appeared to be fungus. Microscopical examination, however, revealed that the growths were in fact masses of nematodes which were later identified as a *Rhabditis* sp.—possibly a new species. Hase is unable to explain this phenomenon but considers that is has something to do with migration from one biotope to another. The paper, and the photographs which illustrate it, were prepared in 1938 but owing to the war publication has been delayed. A.E.F.

(716b) Kinne & Gerlach describe and figure *Gammarinema gammari* n.g., n.sp. The new genus is closest to *Monhystera* but is distinguished by the shape of the buccal cavity. The nematodes are found on the ventral surface of *Gammarus* spp. and since ova, embryos and adult worms are all found on Gammarus it is assumed that the whole life-cycle takes place there. When the crustacean sheds its skin the worms are able to live free for a time. They attach themselves to the body of Gammarus by means of well developed tail glands. Large numbers of nematodes are often found on one animal: one female *Gammarus salinus* harboured 111 specimens. A.E.F.

(716c) To the seven known species of *Pelagonema*, Allgén adds *P. longicaudum* n.sp. from the Falkland Islands. It differs from *P. norwegicum* in its short buccal cavity which is wider at the posterior end and is surrounded by walls of equal thickness. The tail is long and slim. G.I.P.

717—Zooprofilassi.

a. ROMBOLI, B., 1953.—" Bronchiti e polmoniti da elminti in patologia comparata." **8** (11), 497–502, 505–506, 508–510; (12), 550, 553–566.

(717a) [A fuller account of this paper appears in *Atti Soc. ital. Sci. vet.*, **7**, 97–174. For abstract see No. 491a above.]

NON-PERIODICAL LITERATURE

718—*ALMY, H., 1953.—" Contribution à l'étude de l'action anthelminthique de la notézine." Thesis, Toulouse.

Almy reviews the use of notezine in veterinary work. It is less active against *Dirofilaria immitis* than against other filariae but encouraging results have been obtained in the treatment of "la filariose intra-oculaire". It is very effective against ascarids and less constantly against hookworms. It appears to have some action on whipworms but none on metastrongylids or cestodes. [Based on an abstract in *Rev. Méd. vét.*, **104**, p. 428.] S.W.

719—COINAUD, M., 1953.—" Les thiazines: propriétés anthelminthiques." Thesis, Alfort, 67 pp.

In this thesis Coinaud describes the chemical constitution of a number of thiazine derivatives and discusses their chemical, physical and other properties. From his own observations and other published work he concludes that thiodiphenylamine (phenothiazine) remains the anthelmintic of choice. S.W.

720—DIAS, E., 1953.—" Nova possibilidade de combate aos moluscos transmissores das esquistossomoses." Minas Gerais: Emprêsa Editora, 22 pp. [English summary p. 15.]

Dias isolated and tested molluscicidal bacteria for controlling *Australorbis glabratus*. He macerated in water live and dead molluscs from natural habitats, using the solutions to infect fresh snails, and he cultured strains on agar plates from the ovotestes of naturally infected snails. Snail broth and peptone water also furnished good culture media. By passaging infections, e.g. by successively macerating some molluscs of one batch into the surrounding water and adding fresh ones, an increase in virulence was made possible and new strains were given a chance of establishing themselves. After four-and-a-half months the authors had 126 recorded series in 8,497 snails with 779 passages. They were unable to identify the strains. Experiments in the field and laboratory were very encouraging. In two naturally inhabited, abandoned tanks which were treated with virulent cultures, 69·4% and 93·9% of the molluscs were dead 20 days later and 73·4% and 96·7% after 27 days. In one pool artificially supplied with snails, 85·9% succumbed four days after treatment. Lethal action was strongest with some strains on newly hatched snails. Certain helicoid molluscs were also killed and mosquito larvae and nymphs were seemingly affected. Trials had not so far been made with extensive bodies of water or rivers, but on a large scale macerated snails could probably be transferred from one focus to another directly, without isolation and culture in the laboratory. M.MCK.

721—ESTRADA GAMBOA, H., 1953.—" Estudio comparativo del hexylresorcinol y la dietilcarbamazina en el tratamiento de helmintiasis intestinales en una comunidad escolar de la ciudad de México." Thesis, Mexico, 25 pp.

In Mexico City hexylresorcinol administered orally appeared to have cured 9 out of 10 children with ascariasis, 27 out of 37 with hookworm and 19 out of 40 with trichuriasis. Hetrazan cured 3 out of 4 with ascariasis, 5 out of 10 with hookworm and 8 out of 18 with trichuriasis. Hetrazan was ineffective in 10 cases with *Hymenolepis nana*; although at the beginning of treatment there was a reduction in the number of ova, the number increased again, apparently when the remaining larvae reached maturity. P.M.B.

722—GOODEY, T., 1953.—" Oats and varietal susceptibility to stem eelworm infestation." International Botanical Congress (7th), Stockholm, July 12–20, 1950. Proceedings, pp. 203–204. [Discussion p. 204.]

The author gives a list of the plants which may be attacked by the oat race of *Ditylenchus dipsaci* and points out that losses could be avoided by means of resistant oat varieties. A few resistant winter varieties are known but spring varieties are much needed. Goodey finds that the varieties Capa, Pampa and Victoria are resistant and discusses the possibility of using them for breeding a resistant spring oat of good quality. In the discussion following, van Slogteren asks whether the oat eelworm is the same as that which attacks onions all over Europe. Goodey states that stem eelworm from eight cultivated crops and from weeds can parasitize onions but that this does not prove that they all belong to the same biological race. M.T.F.

723—MACKINNON, J. E., PESSÔA, S. B., PIFANO, F. & TREJOS, A., 1953.—" Parasitology (1949–1950)." Montevideo: UNESCO Science Cooperation Office for Latin America, 287 pp.

724—PÉREZ SOLORZANO, S., 1953.—" Infestación experimental de *Hymenolepis nana* en ratas blancas y su tratamiento con metoquina." Thesis, Mexico, 27 pp.

Pérez Solorzano showed by experiment that rats resist infection by the human strain of *Hymenolepis nana* and are highly susceptible to their own strain, *H. nana* var. *fraterna*. Theses reach maturity 8–12 days after infection. Metoquina (atebrin), given orally as a single dose of 8·3 mg. or 16·6 mg. per kg. body-weight cured 16 out of 20 and 18 out of 20 rats respectively. Administration of second doses to refractory cases was ineffective. M.MCK.

725—SLUITER, C. P., 1953.—" De dierlijke parasieten van den mens." Amsterdam: Scheltema & Holkema N. V., 6th edit. (edited by N. H. Swellengrebel & J. E. W. Ihle), viii+487 pp.